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THE UTILITY OF TRANSLATION AND WRITTEN SYMBOLS DURING THE FIRST 30 HOURS OF LANGUAGE STUDY.

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AURAL-ORAL METHODS IN THE EARLY STAGES OF LEARNING A SECOND LANGUAGE WERE COMPARED AND CONTRASTED. JAPANESE LANGUAGE LESSONS WERE PRESENTED ENTIRELY BY TAPE, WITHOUT THE CORRECTION OF A MONITOR, TO TWO GROUPS OF COLLEGE STUDENTS. ONE GROUP USED A TEXT OF TRANSLATIONS THE OTHER DID NOT. EACH OF THESE GROUPS WAS FURTHER DIVIDED INTO THREE SECTIONS AND EACH SECTION RECEIVED A DIFFERENTLY ORDERED PRESENTATION OF THE SAME MATERIAL. WHEN THE RESULTS OF THE TWO GROUPS WERE COMPARED, NONE OF THE VARIATIONS APPEARED TO HAVE A DIRECT EFFECT ON LEARNING OR RECALL OF PRONUNCIATION, SYNTAX, OR COMPREHENSION. THE INVESTIGATORS SUGGESTED, HOWEVER, THAT STUDENTS MAY BENEFIT IN PRONUNCIATION, SYNTAX, AND COMPREHENSION FROM TRAINING WITH A TRANSLATION TEXT, ESPECIALLY IF THEY ARE TRAINED IN A LANGUAGE LABORATORY. THE INVESTIGATORS ALSO INDICATED THAT THE ADVANTAGE DERIVED FROM THE USE OF THE TEXT MIGHT BE LOST IF THE SYSTEM PHONEMIC OF NOTATION IS COMPLEX OR FAILS TO CONSISTENTLY DESIGNATE IMPORTANT ASPECTS OF THE PRONUNCIATION PATTERN. (PM)

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THE UTILITY OF TRANSLATION AND WRITTEN SYMBOLS DURING THE FIRST THIRTY HOURS OF LANGUAGE STUDY

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FOREWORD

There are at least three important areas of experience relevant to research in language learning: language teaching, linguistics, and psychology. The investigators taking part in the project reported here have backgrounds in one or more of these areas.

Of the linguists participating, all of whom are descriptivists with a particular interest in American Indian languages, Dr. Sawyer and Mrs. Silver are teachers of English as a foreign language; Mr. Aoki, a native speaker of Japanese, is a teacher of Japanese. Dr. Sawyer, director of the University of California Language Laboratory, and Mrs. Silver have had experience with the problems involved in the preparation of teaching materials for both classroom and laboratory use. Of the psychologists participating, Dr. Ervin, a social psychologist interested in psycholinguistics and bilingualism, also teaches English as a foreign language; Miss D'Andrea has a background in verbal behavior and statistics.

Focusing the viewpoints of the teacher, the linguist, and the psychologist on the specific problems of language learning this experiment was concerned with has been fruitful. The linguists have learned something of the difficulty of measuring language skills. The psychologists have gained a practical reinforcement of their conviction of the complexity of the variables affecting verbal behavior, and the efficiency of systematic programming of structural drills.

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CHAPTER I

THE PROBLEM AND THE DESIGN

1.1. Description of the Problem. A student beginning to learn a new language usually works with four sets of data: 1) sound sequences, 2) a written symbolization of those sequences, 3) the meanings attached to the sequences, and 4) statements about the structural inter-relations of the sound sequences and meanings.[1]

Many teachers today feel that the presentation of language material has a logical sequence: first hearing, then speaking, then reading, and finally writing. Ideally the aim of the audio-lingual method, which now has currency among language teachers, is to teach a student to pronounce and manipulate an extensive vocabulary and a variety of structures without ever seeing a written symbolization of the language he is learning. The introduction of written forms is delayed until a time neither well-defined nor universally agreed upon.

We have questioned the sequence "hearing, speaking, reading, and writing," especially if the term "reading" subsumes any sort of written form in a normalized phonemic notation, not an orthographic record. Might not a more satisfactory statement of the sequence be this: hearing and seeing, speaking, reading, and writing? The question is whether a student who already speaks and reads his own language can effectively be separated from a written representation of the new language he is learning. Is his control of the sounds and grammatical structures of that language helped or hindered by such a separation? It was one of the purposes of the experiment discussed herein to determine whether the presence or absence of text has any marked effect in the early stages of second language learning.

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[1] Of these four sets, the fourth, grammatical statements, is not taken here as primary because in native language learning the learner acquires the language and the ability to utilize its written symbolization first, the formal grammatical knowledge later. We are of course separating formal grammatical knowledge from the ability to comprehend and generate grammatical sequences, which is normally acquired inductively without any formal grammatical statements at all in native language learning.

The experimental language learning situation provided three dependent variables: skill in phonological discrimination and production, learning of meanings, and acquisition of grammatical patterns. We shall examine the influence of the presence of a text on each of these in turn.

It would be expected that a text would improve phonological learning for distinctions which are phonemic but acoustically difficult, since the different symbolization would provide added cues. A Japanese example (Japanese was the language used) is the difference between the phonemes we have written as /d/ and /ḍ/, the latter being the "r" of most romanizations of Japanese. This phoneme is sometimes like American English "l" or "r", more often like a British "r", or like a lenis medial "t", as in "letter," with the tongue very lightly touching the roof of the mouth. Having a text should reinforce the auditory differentiation of the two Japanese phonemes, which to an American seem very similar. A text would also help in differentiating pitch when pitch is marked. Such facilitation would be especially important when the student is entirely dependent upon taped instruction and lacks reinforcement from a teacher.

A text might impair phonological learning if sounds are different from the sounds appropriate to the text symbols for the mother tongue. In our transcription of Japanese, the difference between single and double consonants signals duration of the consonant; according to their usual reading habits, Americans would not expect any contrast between "t" and "tt" but rather a change in quality of the preceding vowel, cf. "mating" vs. "matting". Also in conflict with American reading habits, even though the segmental phonemes are all the same, is the fact that a Japanese word must be read with equal stress on all syllables. Phonological learning might again be impaired by the presence of a text if the symbol system used does not signal allophonic variations. In our transcription of Japanese, /n̄/, the "syllabic nasal", has nasal allophones which are homorganic with the sounds that follow, e.g. /n̄p/, /n̄t/, /n̄k/ are phonetically [mp], [nt], [k]. This type of articulatory assimilation is also common in rapid English speech. Less familiar to an English speaker, for example, is the velarized allophone of /n/ before juncture followed by a vowel.

It would be expected that a text should facilitate paired-associate and syntactic learning, providing added cues during learning, rehearsal, and recall -- assuming the text uses familiar symbols.[2]

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[2]While this experiment will not be concerned with the merits of different symbol systems, the benefits, for example, of the use of diacritics, may be different for phonological discrimination and for recall. Thus those with a text distinguishing /d/ from /ḍ/ might learn faster to hear the perceptual difference; but they might be more ready to confuse the two phonemes in recall of translations if they visualize the text, since Americans are not used to diacritics.

The second purpose of this experiment was to determine whether the presence or absence of translation has any important effect on learning during the beginning phase of language study. Again, the attitude of many language teachers is that translation, especially when the student is first becoming acquainted with a second language, is a deterrent to the development of the student's control of the new language; translation hinders the learning process in two ways: (1) the presence of the native language represents a constant interference, because it is an active reminder to the student of phonological and grammatical habit patterns he already possesses, habit patterns which may not occur in the second language; (2) translation places an emphasis on meaning which shifts the student's attention from how to say something to what to say before he has acquired a firm control of the mechanics of the second language.

What would be the effect of varying the order in which the language is practiced without translations and with translations? Practice without translations provides total attention to sound and syntax and no reinforcement except for correct pronunciation and sequencing. In the case of adults, who tend to be strongly meaning- rather than sound-oriented, such practice removes the possibility of attention to meaning. Where this practice precedes the learning of meaning through translation, both these benefits should be strong. Where such practice follows practice with translation, the facilitation may be less; then the poor pronunciation may have been practiced so long as to resist change, and attention to sounds may be distracted by rehearsal of translations. It is, in fact, a common experience in remedial second-language training that it is extremely difficult to improve the pronunciation of a fluent second-language student. Thus, from the standpoint of the sound system, later introduction of the translations should be preferable.

But what about the learning of meanings? In current experiments on paired-associate training, prior response familiarization has been found to be facilitative for more rapid training. It helps the learner identify and integrate appropriate responses in the new language, responses which he must later associate with known meanings, whether in pictures or in his native language. But familiarization training also leads to strong associations between the words in the new language and impairs performance after cessation of training.[3] The new words are easily confused with each other since they are not associated with any distinctive cues, verbal or non-verbal, such as different meanings provide. What if practice without translation <u>follows</u> learning translations? Presumably, this procedure would provide rehearsal and be facilitative for recall.

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[3]Current research of Dr. Leo Postman.

In sum, we would expect that a text would facilitate learning of meanings and syntax, but might impair certain aspects of phonological learning in some languages and be facilitative in others. Studying pure second-language sequences divorced from translations or any referential meanings should improve pronunciation more and acquisition of meanings less, than studying such sequences after exposure to translations.

1.2. Design of the Experiment. The presence or absence of a text and the presence or absence of translations together constitute two of the most fundamental possible variations in the language learning situation. In attempting to measure the effects of these variables, the first problem was that of designing a situation which would allow the variables to be separately measured, while holding the amount of practice constant for all the groups involved.

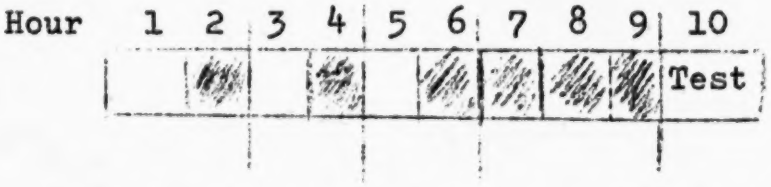
In the original design it was planned that the translationless groups would first study the entire set of lessons without glosses (translations) and then be given the glossed version. Even though the lesson material was to be constructed in such a way that it would be possible to anticipate forms and constructions with only the sound sequences of Japanese as stimuli, it was decided that a large block of time spent studying and memorizing without any translations given might result in serious loss of interest and an absolute inability to cope with the problems introduced in more advanced lessons. To avoid the possibility of a serious drop in motivation, the lessons in the new design were cycled in blocks in such a way that a cycle which included the translations would be completed for all groups at the tenth, twentieth, and twenty-ninth hours. This reduced the study period on the lessons without English glosses to approximately three hours in each of the three ten-hour blocks. This plan had the advantage that all groups could be tested and the scores compared after the completion of each ten-hour cycle.

It is important to remember that all groups of students were learning only to speak Japanese, and that they all had an equal amount of intensive oral practice with and without translations. The differences between the groups lie in the presence or absence of text and in the various orders in which the versions of the lesson with and without translation were presented. These served as two independent variables in a factorial design. There were three groups without text and three with text, corresponding to three levels of order: I, short cycles--translations at the end; II, long cycles--translations at the end; III, long cycles--translations at the beginning. Groups I and II both had familiarization training with Japanese sound sequences before training with English glosses. These two groups contrast in the amount of massing of practice in the sound sequences.

The detailed course plan in its revised version consisted of twenty-six lessons and three tests (the final test given twice, the second time occurring after a lapse of twelve days), making a total of thirty hours. In the diagram that follows, the light areas represent the time allotted to lessons without translation, the darkened areas to time devoted to lessons with translation. Each complete block represents ten hours. Three lessons were presented one time each hour. The entire experiment required three repetitions of each pattern.

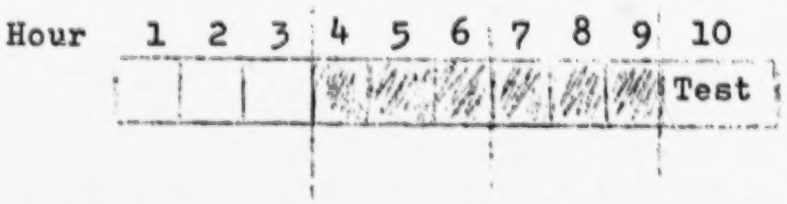
Groups IR̄ (Without Text) and IR (With Text)

Hours without and with glosses were alternated and followed by one repetition of the block of lessons with glosses.



Groups IIR̄ (Without Text) and IIR (With Text)

A block of three hours without glosses was followed by two repetitions of the same block with glosses.



Groups IIIR̄ (Without Rext) and IIIR (With Text)

Two blocks of three hours with glosses was followed by one block without.

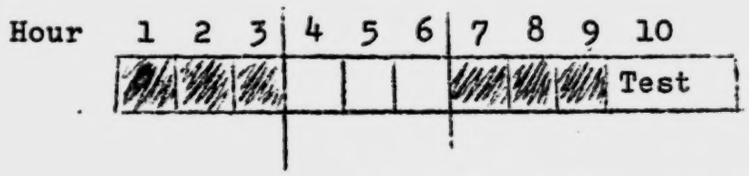
A table of this entire presentation pattern is included as Appendix B. Note that in the course of the instruction each lesson without glosses was practiced once and each lesson with the English translation was practiced twice by all students in all groups.

In a rough way groups IR and IR̄ had the lessons ordered in somewhat the manner of a characteristic language class. The class practiced the sounds of the items to be learned, then they studied the lesson with the translation added. This pattern continued through six alternating hours and was followed by the three hours of review of the lessons with glosses.

Groups IIR and IIR̄ had a block of practice on the sounds followed by two blocks of work on the same lessons with glosses. These groups differed from IR and IR̄ in having a somewhat concentrated practice on the sounds alone before going on to the lessons with translation. In other words, before practicing new material with translations, Groups IIR and IIR̄ were exposed to a larger block of that new material without translations than were groups IR and IR̄.

Groups IIIR and IIIR̄ reversed the pattern of IIR and IIR̄ in having their concentrated practice on sounds alone last. Groups IR, IR̄, IIR, and IIR̄ were alike in having a block of three hours of practice on the lessons with translation at the end of each cycle.

The experiment consisted of a fall run and a spring run. In the spring, a change in design for groups IIIR and IIIR̄ was introduced. These two groups were not comparable to the others at the times of testing because their exposure to translation was less recent. In order to make all the experimental groups alike in the material to which they were exposed just before the tests, they were given a review cycle through all the lessons as the last cycle before each test. Thus for groups IIIR and IIIR̄ the new design became:



The complete new design which differs only for Groups IIIR and IIIR̄ appears in Appendix C. Again, note that, just as in the earlier design, each lesson without glosses is heard once and each lesson with the English translations is heard twice by all students in all groups.

It had originally been hoped that the differences uncovered among the subjects participating in the fall run would have been great enough that more variation in the design could have been used in the spring. Since no significant differences appeared in the fall, the same design was used again (with the exceptions noted for Groups IIIR and IIIR̄) in an effort to clarify trends by doubling the number of subjects.

CHAPTER II

MATERIALS AND TRAINING

2.1. The Language. In choosing the experimental materials, the first question considered was whether to use a real language or a made-up language based on nonsense syllables. To create a set of nonsense syllables and a "nonsense" grammar which would not be a redistribution of English sounds and sound clusters, but would reflect the problems of learning a foreign language would have been more work than was feasible. It also seemed likely that the experimental subjects could not sustain their interest in such a language for thirty hours.

Japanese was the language chosen because it would not be commonly known to the undergraduates who might be used as subjects; it is a major language in which considerable interest exists; it is not too radically different from the European languages most students study. Moreover, native speakers were avaialable including Haruo Aoki, one of the project's investigators.

The writing system adopted included the following symbols.[4]

Consonants					Vowels	
p	t	č	k		i	u
b	d	j	g		e	o
f	s	š	x	h	a	
m	n	n̄	ŋ			
	ḍ					
Semi-vowels						
w	y					

[4] No traditional system for writing Japanese was used.

Length was indicated by doubling the vowels and consonants. Voiceless vowels were indicated by a slash mark (i̸, u̸, e̸).[5] High pitch (/'/) was marked above the vowel and only in the pronunciation drills. Low pitch was unmarked. Proper names and the first letter in a sentence were capitalized; periods, commas, and question marks were used in the appropriate places.

We have already suggested that phonological learning might be impaired by the presence of a text if the symbol system employed does not signal allophonic variations. The fact that the writing system we adopted is not completely phonemic has an important bearing on the evaluation of the pronunciation tests of students with text. [t] and [č] (also [ts]) are allophones of the same phoneme, as are [d] and [j] ; [g] and [ŋ]; [f], [x], and [h]; [s] and [š]. Thus the handicap which a purely phonemic notation might have introduced in reducing, for those with text, perception of allophonic variations, is removed to some degree.

Relatively few segmental sounds are radically different from the English spoken by the experimental subjects: chiefly [x], [f], /ḍ/, and [ts]. [x] does not occur in our subjects' speech; [f] and /ḍ/ represent articulatory differences; [ts] has a distributional difference. The suprasegmental features of equal syllable stress and contrastive syllable pitch are quite different from the English pitch and stress patterns. Students with English reading habits might not notice the equal stress which was unmarked in our materials. Because high pitch was marked in the pronunciation drills, the students with text should have better control of the pitch contrasts than those students without text.

Since, in general, Americans learning Japanese learn a simpler phonemic system than their own and since the notation used in the text was not only phonemic but also allophonic, the group with text in this experiemt might have a greater advantage than a comparable group learning a language or notation with a different relation to English phonology and orthography.[6]

2.2. The Lessons. Once the language was chosen and the writing system decided upon, the next problem was to select lesson materials. While the first thought was to adapt lessons from

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[5] A device used by Eleanor Harz Jorden in her Japanese lesson materials.

[6] English orthography is less closely related to English phonology than is the case with most other orthographic systems. It is possible that, given a similar degree of equivalence of phonemic systems, speakers of another language might benefit more from our system of Japanese orthography, in learning Japanese, than our groups did, because of the greater consistency of their spelling and reading habits.

one or another of the available textbooks of Japanese, consideration of the necessity for controlling the material so that it would not introduce any variables other than those the experiment was concerned with led to a decision to create our own lessons. Specific aspects of Japanese phonology and grammar were presented and drilled, with and without translation, in a manner which covered the corpus to be taught as systematically and completely as possible.

The lesson materials in this experiment have some unusual properties. It must be kept in mind that all of the students' training was to take place in the language laboratory; there was to be no classroom training; the students were not to have the help of a teacher; they were never to be corrected or given a description of the phonological and grammatical systems of Japanese. These limitations meant that the materials had to encourage self-teaching and self-correction; therefore, the lessons were designed as a rather pure case of the contrastive technique. Their focus is on the structural features of sound and syntax; content, or meaning, has had relatively little role in the selection of material.

It is apparent to a student that these are unusual lessons. At the end of the experiment all of the students commented that they were aware of the structuring and patterning of the drills and they were fairly evenly divided in their reactions toward the lack of attention paid to "useful" vocabulary. Even though many felt confined by the emphasis on structure and expressed a wish to have been exposed to "natural" speech, the majority, in making unsolicited comparisons between the experiment and other second language training they had had, regretted that their previous training had not included at least some material taught in this fashion.[7]

While emphasis on structural properties is obvious in the case of drills for lessons without translations, it has an important consequence for the material with translations. Since there is little coherent focus of content in the lessons, the student's attention must be drawn to sound and structure, and possibly his interest is affected. The aids to memory for meanings provided by associations between English words from the same content domain are removed. That is, if a set of vocabulary bearing on household objects is learned together, a student may later recall the meanings by remembering the content nexus in which he first encountered the word. No such aid exists exists here. Because the basic principle for writing the drills

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[7]Quite a few students commented that they had received a good foundation in Japanese pronunciation and expressed the intention of taking a course in Japanese so they could learn useful words and phrases.

was that of contrast, in order to adhere to this principle in creating the pronunciation drills, it was often necessary to use vocabulary items which would ordinarily never occur in an elementary language course. To provide a phonological continuity between the pronunciation drill and the grammar drill, and to minimize the size of the total vocabulary, the vocabulary of the grammar drills was based on (1) items taken from the pronunciation drills, with preference given to the more usual items whenever possible, and (2) ordinary vocabulary which either demonstrated a phonological problem emphasized in the pronunciation drills or presented no pronunciation difficulties at all. Again, in keeping with the principle of contrast, grammatical structures were not introduced or drilled until they could be contrasted with those previously learned. Therefore, the character of the vocabulary content of both words and phrases was primarily conditioned by the selection of phonological and grammatical problems to be taught. The reader should bear in mind, then, in examining the results of this research, that the lessons do not correspond to those characteristic of traditional teaching, even of the aural-oral variety.

The basic lesson plan consisted of drill on a pronunciation problem and practice on one or more grammatical problems. Of the twenty-six lessons, twenty-four followed this plan; the remaining two were based on six-line dialogues containing structures the students had already learned or were about to learn. Three of the lessons were review lessons: 5, 10, and 24, lesson 24 being a review of every structure presented. A summary of the pronunciation problems and grammatical patterns taught is presented below.

<u>Phonology</u>

1. Segmental
   a. Vowels
      1. Short and long
      2. Voiced and voiceless
      3. Two-vowel clusters
      4. /ɨ/ and /ɨ́/
   b. Consonants
      1. Short and long
      2. Voiced and voiceless
      3. /k/, [č], [š], [x] before /i/, /ɨ́/
      4. [s]and [ts]
      5. /d/ and /ḍ/
2. Non-segmental
   a. Syllable pitch: high and low
   b. Sentence intonation

Grammar

1. Sentence types
   a. Request: Mite kudasai.
      1. Request-answer combination:
         Šiŋa sañ, e o mite kudasai.
         Hai, mimasɣ́.
         (Mr. Shiga, please look at the picture.
          All right, I'll look at it.)
   b. Equational: E desɣ́.
      1. Statement:
         Koḍe wa e desɣ́.
         (This is a picture.)
      2. Question-answer combination:
         a. Koḍe wa nañ desɣ́ ka?
            E desɣ́.
            (What is this?
             It's a picture.)
         b. Nañ no e desɣ́ ka?
            Giñkoo no e desɣ́.
            (What is it a picture of?
             It's a picture of a bank.)
         c. Giñkoo no e desɣ́ ka?
            Hai, soo desɣ́.
            (or) Iie, soo ja aḍimaseñ.
            (Is it a picture of a bank?
             Yes it is.
            (or) No, it isn't)
   c. Non-equational:
      1. Simple verb
         a. Mimasɣ́
            1. Statement:
               Šiŋa sañ wa asɣ́ta e o mimiasɣ́.
               (Mr. Shiga is going to look at the
                picture tomorrow.)
            2. Question-answer combination:
               Šiŋa sañ wa itsu e o mimasɣ́ ka?
               Asɣ́ta mimasɣ́.
               (When is Mr. Shiga going to look at
                the picture?
                He's going to look at it tomorrow.)
         b. Imasɣ́
            1. Statement:
               Šiŋa sañ wa učі ni imasɣ́.
               (Mr. Shiga is at home.)
            2. Question-answer combination:
               Šiŋa sañ wa učі ni imasɣ́ ka?
               Hai, imasɣ́.
               (Is Mr. Shiga at home?
                Yes, he is.)

2. Gerund plus imasɣ: Mite imasɣ.
   a. Statement:
      Šiŋa sañ wa e o mite imasɣ.
      (Mr. Shiga is looking at the picture.)
   b. Question-answer combination:
      Šiŋa sañ wa e o mite imasɣ ka?
      Hai, mite imasɣ.
   (or) Iie, mite imaseñ.
      (Is Mr. Shiga looking at the picture?
       Yes, he's looking at it.
   (or) No, he isn't looking at it.)

2. Phrase types
   a. Verb:
      Mite ite kudasai.
      (Please keep looking at it.)
   b. Noun:
      1. Endocentric
         a. dai ni ka
            (the second lesson)
         b. kono ie
            (this house)
         c. ki no ie
            (a house of wood)
         d. taiheñ čiisana ki no ie
            (a very small house of wood)
      2. Exocentric
         a. Soto o mite imasɣ.
            (He's looking outside.)
         b. Soto e itte imasɣ.
            (He's gone outside.)
         c. Soto ni imasɣ.
            (He's outside.)
         d. Šiŋa sañ wa itte imasɣ.
            (Mr. Shiga has gone.)

Although various kinds of drills were used to present the lesson material, there were two major categories: (1) drills in which the student needed only to imitate the Japanese he heard and (2) drills in which the student had to provide a response in Japanese to a Japanese or English stimulus.

The drills in a lesson were limited to the number which could be presented and practiced in ten to fifteen minutes. Because two sets of lessons were necessary, one without translations and one with, the drills had to be designed with this need in mind. All the drills for the lessons without translations were designed so that the student could give an appropriate response without knowing the meaning of the utterance. As for the lessons with

translations, while some of the drills differed from the translation-less ones only in that the English glosses were added, other drills employed English as a stimulus.

Examples of pronunciation and grammar drills for both types of lesson can be found in Appendix D.

2.3. Training. In order that all the subjects would have the same amount of contact with Japanese, the lessons and the oral test questions were taped. The lesson tapes were ten to fifteen minutes long, allowing presentation of each lesson three times in one hour. The voice of a male American native speaker of English was used for all English utterances and two male Japanese voices were used for all utterances in Japanese. The Japanese spoke varieties of the standard Tokyo dialect. Two voices were used in order to give additional cues for separating one utterance pattern from another in the lessons without translations. One voice usually began a sequence, asking questions, making statements, etc. The other voice usually came second in an exchange, answering questions, responding to a request, or, in discrimination drills, supplying the correct answer.

The lesson tapes were presented in the Language Laboratory to groups of ten students at a time. Five students of each group had a printed version of the lesson in front of them every lesson hour. All students had printed instructions for the drills. The students received no instruction other than the taped lessons; no explanations were given about the sounds or grammatical structure of Japanese; no questions the students might ask about the language or the experiment were answered; no attempts were made to correct student errors. The function of the laboratory attendant, present every hour, was to see that the lesson hour ran smoothly, to make any necessary announcements, nd to keep the students' attention from lagging by cautioning them to practice. Identical announcements were made for all groups, fall and spring.

2.4.1. Design of Tests. After the completion of each cycle of lessons, a test was given, the same test to all groups. None of the tests involved use of the writing system: the students either gave oral responses or indicated answers b checking "a", "b", or "c", or "yes" or "no" on an answer sheet. Test 1 consisted of three questions; Test 2, six; Test 3, the final test, eight questions. In all the tests a certain number of the questions required no knowledge of the translation of the particular utterances being tested: all the questions in Test 1, the first three and the last in Test 2, and the first three and the last two in Test 3. Test 2 had two questions, and Test 3 had three questions involving translation.

The questions, which dealt with pronunciation, grammar, and translation, can be classified as production or recognition items, depending on whether the student was required to give an oral response or was to check the answer sheet. A distribution of the

question types is presented in the following table.

TABLE 1

TEST QUESTION TYPES

	Production			Recognition		
	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
Pronunciation	Q3	Q6	Q7 Q8	Q1 Q2 (Items 17-20)	Q1 Q2 (Items 17-26)	Q1 Q2 (Items 17-26)
Grammar				Q2	Q2 Q3	Q2 Q3
Translation			Q6		Q4 Q5	Q4 Q5

The questions concerned with testing phonological discrimination and pronunciation were of the following kind:

1. The student heard one Japanese word. It was followed by two other words. He was to decide which of the two words was the same as the first. (Q1)

2. The student heard a request or a question. He then heard two replies. He was to decide which reply was appropriate. The correct answer depended upon the student's ability to make a proper phonological discrimination (Q2, Items 17-26); for example:

Šǐtte imasǎ ka?

a) Hai, šǐte imasǎ.
b) Hai, šǐtte imasǎ.

In the above two question types, the contrasts which the students had to discriminate were presented twice and the correct choice was required in both cases in order for credit to be given.

3. The student heard a sentence and was to say it twice. The question was scored according to the number of sentences right. Errors were defined as garbles, losses, transpositions, or substitutions of words or larger stretches of speech. (Although this question has three different numbers, Q3 in Test 1, Q6 in Test 2, and Q7 in Test 3, the content was the same for all tests.)

4. The student heard short Japanese sentences which he was to say twice. Seventeen of these sentences were minimally different and both contrasting features had to be pronounced correctly in order for credit to be given. Single selected phonologically difficult features in eleven utterances were scored for phonetic accuracy. (Q8)

The questions described below dealt specifically with grammatical problems.

1. The student heard a request or question. He then heard two replies. He was to decide which reply was appropriate. The correct choice depended upon his control of grammatical patterns. (Q2)

2. The student was asked to observe the use of a word in a sentence. He then heard a series of words and phrases and was asked to indicate by checking "yes" or "no" whether these could fill the same slot in the sentence as the given word did. (Q3)

The translation questions had the following design.

1. The student heard an English utterance. He then heard three Japanese utterances. He was to check "a", "b", or "c" to indicate which Japanese utterance was equivalent to the English. (Q4)

2. The student heard a Japanese utterance. He then heard three English utterances. He was to check "a", "b", or "c" to indicate which English utterance matched the Japanese. (Q5)

3. Having heard an English word, phrase, or sentence, the student was asked to give the corresponding Japanese form twice. (Q6)

Test 3 contains examples of all the test questions used in the course of the experiment; see Appendix E.

2.4.2. Scoring test responses. The majority of questions were designed as recognition items, with multiple choice responses which could be checked on response sheets. The stimuli were always presented on tape. There were, however, two questions in the fall and three in the spring which required oral, tape-recorded responses. One of these was Q6, a translation from English to Japanese. These responses were scored right or wrong, without attention to high standards of phonetic accuracy in the student's response. Essentially the judgment was on grammatical and lexical grounds.

For two of the production questions more difficult judgments were required. One we have called a test of articulatory fluency. In this item, given in both the fall and the spring (Test 3, Q7), a student was asked to repeat sentences presented on tape. These

were successively expanded or shortened, and they also included unrelated sentences of increasing length. The imitations were judged in terms of transpositions, omissions, insertions, garblings, and substitutions of words and phrases. Both a Japanese and an American linguist scored errors for this test, with scores correlated .81. Most of the disagreement occurred in evaluation of one subject's repetition of one type of error.

In the spring a test was designed purely as a test of accuracy of pronunciation. It was given at the final session, at the time of the repetition of Test 3, (Test 3, Q8). Short sentences were presented, to be imitated twice. The test (see Appendix E) included three types of items. Some were merely buffer items, which were not judged. A second type was designed for phonetic evaluation. For these, the Japanese linguist transcribed the sound phonetically and marked them right or wrong. On a third type of item, minimal pairs were presented. Both members of the pair were in the test, but not in adjacent position. Students were given differing stimulus tapes so that the judge did not know which of the pair the student was imitating. He checked which of the two he heard, after listening once. It should be noted that the conditions of judgment were carefully controlled, since the judgement in this case constituted a sensitive perceptual test for the judge.

CHAPTER 3

SUBJECTS AND PROCEDURE

3.1. Preliminary Selection. The subjects were undergraduate students at the University of California at Berkeley. They were contacted through the University Placement Office and were given a questionnaire to fill out. Students were excluded if they had a marked accent (Southern, New England, etc.), determined through a short interview; if English was not their native language; if they had any previous knowledge of Japanese; if they had or were taking a formal course in phonetics; and if they had any major speech or hearing difficulties. One final criterion, not rigidly observed, was the age of the student. Most of the students selected were between the ages of 18 and 23, although a few were older.

3.2. Pretesting. Students not excluded on the basis of the above criteria were given the Carroll and Sapon Modern Language Apitude Test (MLAT) (Appendix A, I). Since there were very few students at the lower end of the distribution, and in order to match the groups as closely as possible, students with percentile scores on the MLAT of less than 45 were excluded. The remaining students were then divided into groups of five each according to their scores on the MLAT. The selection of students was the same in the spring as in the fall. The sex of the groups was controlled so that there would finally be five male and five female students in each group. The subjects were to be paid for their hourly attendance on completion of the full set of hours.

3.3. Final Selection. The final composition of the groups is given in the following table.

TABLE 2

SCORES ON MODERN LANGUAGE APTITUDE TEST

Fall Groups				Spring Groups			
Group	Sex	Mean Age	Mean MLAT Percentile	Group	Sex	Mean Age	Mean MLAT Percentile
IR	2F, 3M	18.6	75.8	IR	3F, 2M	18.4	81.6
$I\bar{R}$	2F, 3M	20.0	80.8	$I\bar{R}$	3F, 2M	18.2	73.4
IIR	3F, 2M	18.4	76.4	IIR	2F, 3M	20.6	78.2
$II\bar{R}$	3F, 2M	19.6	79.8	$II\bar{R}$	2F, 3M	18.4	75.8
IIIR	2F, 3M	19.8	78.4	IIIR	3F, 2M	20.8	76.8
$III\bar{R}$	3F, 2M	19.4	75.8	$III\bar{R}$	2F, 3M	18.6	81.2

It was originally thought that it would be possible to combine the fall and spring groups in the final analysis of the results. In order that the combined groups would be matched as closely as possible on the MLAT, groups which had a high mean MLAT in the fall had a low mean MLAT in the spring and vice versa.

3.4. Trial Groups. In preparation for the final experimental groups four trial groups were presented the first fifteen lessons and three tests in May and July, 1961. In May two groups of five students each worked through the lessons and were tested at the end of the fifth, tenth, and fifteenth lessons. One group had no printed version of the material being studies, the other did. In both cases the students listened to each lesson three times in an hour, hearing the version without the English glosses once and that with twice.

In July two additional groups of 5 students each were trained with 15 lessons and 3 tests. They were contrasted in that one group heard all 15 lessons without translations before starting over with the translations; the other heard the lessons without translations grouped at the end of training. For both groups, the lessons with translations were heard twice in a row before proceeding. Thus each student, at the end of training, had heard each lesson once without glosses, and twice, together, with glosses. Three tests were given, after lesson 5, in the first block of the experiment, and after lessons 10 and 15 in the second block, when glosses had been introduced for the first group and terminated for the second group. No printed text was used for either group.

The trial groups were used to check the printed lessons and tape recordings of the lessons for errors. They served as a proving ground for the various test questions and also allowed some consideration of the feasibility of the general design.

As a result of the experience gained with the trial groups many typographical and recording errors were uncovered and corrected, the tests were almost completely revised, and the general plan of instruction for the groups was entirely reworked.

3.5. Final Groups. In the fall of 1961 the first of the subject groups began the thirty hours of study and testing which constituted the main body of the experiment. Ten students each hour for three hours each evening worked through the cycle of twenty-six lessons (numbered 1 through 24, including the split lessons 2, 2A and 3, 3A). In each group five students were given the printed text of the lesson they were working on during each appropriate fraction of the hour. The other five students each hour had no printed text. The texts of the lesson remained face down until the lesson began and were collected whenever work with that particular lesson was completed. The hours used were 6:00, 7:00, and 8:00 P.M. It was necessary to use these hours because the subjects did not have sufficiently flexible daytime schedules.

Training occurred five days a week in the fall, and six days a week in the spring. Absences had to be made up before the next meeting of the group.

Comment sheets were collected from the subjects at the end of the third, ninth, nineteenth, and twenty-fourth hours as well as after the first, second, and final tests in the tenth, twentieth, and twenty-ninth hours.

During the course of the lessons various drill performances were recorded and one question involving repeating a series of utterances was recorded by each student individually during each of the four test days of the three tests. Test 3, the final test, included the individually recorded vocabulary question, number 6. Question 8 covering pronunciation was recorded by the groups taking the lessons in the spring, at the Test 3 retest.

An attendant, the same person for all groups, fall and spring, was present during all of every hour for every group. For the duration of each hour he monitored individual performances in rotation. Other monitors from the personnel planning and conducting the experiment were present on a random basis. A series of brief announcements, identical for all groups, gave special directions designed largely to urge the student to concentrate. In addition to the necessary directions for tests, these announcements included warning of test dates, encouragements to pay careful attention to pronunciation, and requests that everyone work as hard as possible and concentrate as intensely as possible.

CHAPTER 4

RESULTS AND CONCLUSIONS

4.1. Plan for analysis of results. The subjects were given two tests during the course of the experiment and a final test (Tests 1, 2, and 3). As a measure of retention, the final test was repeated twelve days after the conclusion of the experiment (Test 3, Re-test).

Although the groups had initially been matched as closely as possible on the basis of the MLAT, a preliminary analysis of the test scores gave some indication that there was a correlation between the test means and the MLAT means. For this reason it was decided to do an analysis of covariance on the data. For tests 1, 2, 3 and the re-test, the MLAT was used as the covariance variable. For the re-test, test 3 was also used as the covariance variable.

Since the conditions of the experiment were not the same in the spring as in the fall, a three-way analysis was done, using season (fall and spring) as a block variable (S) with two levels of reading (R) and three levels of order (O). The two levels of reading (R) designate the groups with text as opposed to the groups without text.

4.2. Statement of results. Before discussing the significance of the results, we shall look at them first in terms of the tests as a whole and then in terms of specific test questions.

4.2.1. Results of over-all tests. Tests 1, 2, and 3 differed to some degree in composition. Test 1 included no translation questions; all of the tests contained phonological discrimination and pronunciation items, and grammatical recognition questions. (See pages 14-15 for a breakdown and discussion of the test questions.) For simplicity we have presented a pooling into a total score. Correlations between the total for each test and the MLAT are given in Table 3, the lower correlation for Test 1 presumably reflecting Test 1's different composition.

TABLE 3

CORRELATIONS BETWEEN TESTS AND THE MLAT

	Intra-class r
Test 1 x MLAT	.28
Test 2 x MLAT	.47
Test 3 x MLAT	.45

There was no significant difference between the groups at the time of the first testing. It can be seen from Table 5 that there was little variation between the group means for Test 1.

On Test 2 (Tables 6-7) significant differences appeared, both involving an interaction with season. In the spring, but not in the fall, the reading groups had consistently higher scores than the non-reading groups. In the spring, also, a change in the relation between performance and order of presentation took place: in the fall, order II (long cycle, translation delayed) had been superior; in the spring, this condition produced the worst test results.

On Test 3 (Tables 8-9) it can again be seen that the reading groups performed consistently better than the non-reading groups in the spring, but not in the fall. Thus the trend in Test 2 is continued. In Table 10, the improvement from Tests 1 to 3 shows the same pattern. In none of these tests was there a significant sex difference; for this reason the sexes were pooled.

At the conclusion of training, after Test 3, there was a delay of twelve days and then a re-test, a repeat of Test 3. It is usual in retests for the most difficult items, learned by the best students, to be forgotten, so that some levelling of difference occurs. Inspection of Tables 11 and 12 shows, however, that in the spring the reading groups remained superior to non-reading groups, even though some decline occurred.

The analysis of the change between Test 3 and the re-test is shown in Tables 13 and 14. Here it can be seen that the decline is significantly greater for the groups with text. This was true in both the fall and spring groups.

4.2.2. Results of production tests for pronunciation. Separate evaluation of the tests for pronunciation was undertaken. The two production questions involved were the articulatory fluency question (Test 1, Q3 and Test 3, Q7) and the phonological accuracy question (Test 3, Q8).

Because of some mechanical failures, not all the items on Test 1, Q3 and Test 3, Q7 were available for all the students; therefore, the scores were converted to percentage correct, and the improvement from Test 1 to Test 3 was measured for students tested at both times (Table 15). On Test 1, in both the fall and spring, the groups with no text were consistently superior. Yet, by Test 3, except for fall group I, the groups with text were superior. These differences were not, in themselves, significant, but their combined effect was to produce significantly greater improvement ($p < .05$) for the reading group in both seasons, on the test for articulatory fluency.

It should be recalled that the articulatory fluency question

TABLE 4

TEST 1 ANALYSIS OF COVARIANCE

Source	y^2 S.S.	xy S.P.	x^2 S.S.	$(y-bx)^2$ S.S.	df	MS	F
S	10.42	-17.50	29.40	12.40	1	12.40	
O	1.43	-.68	32.43	1.60	2	.80	
R	1.35	6.30	29.40	.75	1	.75	
SxO	68.03	39.95	61.30	64.54	2	32.27	2.66
RxS	8.81	25.30	72.60	6.29	1	6.29	
RxO	2.10	17.85	151.90	.61	2	.30	
RxOxS	27.64	85.15	265.30	19.21	2	9.61	
Within	620.40	921.40	17071.60	570.40	47	12.14	
TOTAL	740.18	1071.77	17713.93				

b = .054

y = Test 1

x = MLAT

TABLE 5

TEST 1 MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	Reading	Non-Reading	Total	Reading	Non-Reading	Total
I	30.1	32.0	31.1	33.1	31.2	32.1
II	33.1	34.2	33.6	30.2	29.5	29.9
III	32.2	31.8	32.0	31.3	32.7	32.0
Total	31.8	32.7	32.2	31.5	31.1	31.3

TABLE 6

TEST 2 ANALYSIS OF COVARIANCE

Source	y^2 S.S	xy S.P.	x^2 S.S.	$(y-bx)^2$ S.S.	df	MS	F
S	91.27	-51.80	29.40	116.32	1	116.32	1.81
O	24.03	-12.72	32.43	31.49	2	15.74	
R	153.60	-67.20	29.40	185.64	1	185.64	2.89
SxO	617.63	114.85	61.30	568.68	2	284.34	4.42*
RxS	576.60	204.60	72.60	487.49	1	487.49	7.58**
RxO	60.10	-31.15	151.90	82.14	2	41.07	
RxOxS	246.90	254.55	265.30	145.13	2	72.56	1.13
Within	3889.60	3868.00	17071.60	3021.25	47	64.28	
TOTAL	5659.73	4279.13	17713.93				

*Significant at the .05 level
**Significant at the .01 level

b = .227

y = Test 2

x = MLAT

TABLE 7

TEST 2 MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	Reading	Non-Reading	Total	Reading	Non-Reading	Total
I	73.2	82.7	78.0	85.7	75.6	80.6
II	86.5	85.8	86.1	80.3	69.2	74.8
III	82.0	79.8	80.9	84.5	77.9	81.2
Total	80.6	82.8	81.6	83.5	74.3	78.9

TABLE 8

TEST 3 ANALYSIS OF COVARIANCE

Source	y^2 S.S.	xy S.P.	x^2 S.S.	$(y-bx)^2$ S.S.	df	MS	F
S	5.40	-12.60	29.40	20.67	1	20.67	
O	156.90	70.60	32.43	104.46	2	52.23	
R	680.07	-141.40	29.40	800.96	1	800.96	3.37
SxO	1542.70	186.20	61.30	1400.32	2	700.16	2.95
RxS	1251.26	301.40	72.60	1016.32	1	1016.32	4.28*
RxO	96.03	9.10	151.90	114.10	2	57.05	
RxOxS	558.64	379.70	265.30	291.88	2	145.94	
Within	14030.00	7004.00	17071.60	1156.46	47	237.37	
TOTAL	18321.00	7797.00	17713.93				

*Significant at the .05 level

b = .410

y = Test 3

x = MLAT

TABLE 9

TEST 3 MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	Reading	Non-Reading	Total	Reading	Non-Reading	Total
I	101.8	110.7	106.2	121.8	105.3	113.5
II	114.5	113.7	114.1	109.5	89.2	99.4
III	109.6	104.3	106.9	115.7	106.0	110.8
Total	108.6	109.5	109.1	115.9	100.1	108.2

TABLE 10

IMPROVEMENT FROM TEST 1 TO TEST 3

	Fall			Spring		
	Reading	Non-Reading	Total	Reading	Non-Reading	Total
I	71.0	79.8	75.4	90.8	72.8	81.8
II	80.6	79.8	80.2	79.2	59.0	69.1
III	76.2	72.2	74.2	83.6	75.6	79.6
Total	75.9	77.3	76.6	84.5	69.1	76.8

TABLE 11

RE-TEST ANALYSIS OF COVARIANCE

Source	SS y	SP xy	SS x	SS y-bx	df	MS	F
S	18.15	-23.10	29.40	44.17	1	44.17	
O	83.43	46.68	32.43	48.63	2	24.32	
R	260.42	-87.50	29.40	343.11	1	343.11	1.21
SxO	1372.30	161.35	61.30	1242.18	2	621.09	2.20
RxS	1848.15	366.30	72.60	1539.87	1	1539.87	5.45*
RxO	132.23	-98.55	151.90	248.36	2	124.18	
RxOxS	739.90	420.05	265.30	421.62	2	210.81	
Within	16600.40	7519.60	17071.60	13288.21	47	282.73	
TOTAL	21054.98	8305.03	17713.93				

*Significant at .05 level

b = .440

y = Re-Test

x = MLAT

TABLE 12

RE-TEST MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	Reading	Non-Reading	Total	Reading	Non-Reading	Total
I	95.1	113.6	104.4	119.6	103.0	111.0
II	113.2	113.2	113.2	106.0	91.9	99.0
III	108.3	105.7	107.0	116.2	102.2	109.2
Total	105.5	110.8	108.2	113.9	99.0	106.4

TABLE 13

ANALYSIS OF COVARIANCE OF CHANGE FROM TEST 3 TO RE-TEST

Source	y^2 S.S.	xy S.P.	x^2 S.S.	$(y-bx)^2$ S.S.	df	MS	F
S	18.15	9.90	5.40	3.36	1	3.36	
O	83.43	108.85	156.90	27.27	2	13.64	
R	260.42	420.83	680.07	123.52	1	123.52	4.51*
SxO	1372.30	1452.36	1542.70	21.50	2	10.75	
RxS	1848.15	1520.70	1251.26	36.26	1	36.26	1.32
RxO	132.23	75.02	96.03	80.30	2	40.15	1.47
RxOxS	739.90	567.44	558.64	163.98	2	81.99	2.99
Within	16600.40	14657.40	14030.00	1287.19	47	27.39	
TOTAL	21054.98	18812.50	18321.00				

*Significant at the .05 level

b = 1.045

x = Test 3

y = Test 3, Re-Test

TABLE 14

MEAN CHANGE FROM TEST 3 TO RE-TEST

	Fall			Spring		
	Reading	Non-Reading	Total	Reading	Non-Reading	Total
I	-6.8	3.0	-1.9	-2.0	-2.4	-2.2
II	-1.4	-0.4	-0.9	-3.6	2.6	-0.5
III	-1.4	1.4	-0.0	0.4	-3.6	-1.6
Total	-3.2	1.3	-0.9	-1.7	-1.1	-1.4

TABLE

ARTICULATORY FLUENCY TEST (TEST 1, Q3, TEST 3, Q7)

Mean Percent Correct

Fall

	Reading			Non-reading		
	Test 1	Test 3	Difference	Test 1	Test 3	Difference
I	61	84	23	74	88	14
II	65	86	21	73	80	7
III	55	78	23	59	72	13
Total	60.3	82.7	22.4	68.7	80.0	11.3

Spring

	Reading			Non-reading		
	Test 1	Test 3	Difference	Test 1	Test 3	Difference
I	58	74	16	62	72	10
II	54	77	23	60	76	16
III	58	84	26	71	79	8
Total	56.7	78.3	21.6	64.3	75.7	11.4

TABLE 16

PRONUNCIATION. (Test 3,Q8) ANALYSIS OF COVARIANCE

Source	y S.S.	xy S.P.	x S.S.	y-bx S.S.	df	MS	F
R	13.33	8.00	4.80	13.49	1	13.49	1.57
O	7.20	-13.80	57.27	6.93	2	3.46	
RxO	1.87	11.00	407.40	2.13	2	1.06	
Within	198.80	-104.00	9992.40	197.72	23	8.60	
TOTAL	10461.87	-98.80	221.20				

b = -.01

x = MLAT

y = Question 8

TABLE 17

PRONUNCIATION (Test 3, Q8)
MEANS ADJUSTED FOR REGRESSION ON MLAT

	Reading	Non-Reading	Total
I	18.5	17.2	17.8
II	20.0	18.0	19.0
III	18.8	18.1	18.5
Total	19.1	17.8	18.4

was judged for errors in transpositions, omissions, insertions, garblings, and substitutions of words and phrases.

The phonological accuracy question (Test 3, Q8) was given only to the spring group and only occurred on the re-test. In over-all performance there were no significant differences. (Tables 16-17).

The reader is reminded that question 8 (Test 3, Re-test) contained two types of items: those which could be judged for the student's ability to produce adequate phonemic distinctions and those items which could be judged for satisfactory production of allophonic variations.

4.3. Discussion of the results. On examining the results of the tests, we see that the most puzzling are those showing a consistent benefit from a text in the spring run but not in the fall run. In the spring the reading procedure produced superior results on Test 2 and the superiority remained on Test 3 and the recall test, with a significant decline between Test 3 and the re-test.

Three basic differences between the fall and spring groups may be the reasons for the puzzling nature of the results: a change in order of material presentation for groups IIIR and IIIR̄ (see page 6) slightly more massed training in the spring, with a total of 5 rather than 6 weeks for the total training, and a change in the amount of outside attention given during the fall and spring training periods.[8]

It is not likely that the change in presentation of material for groups IIIR and IIIR̄ is the explanation of the puzzle as these groups were not contributing to the interactions. While the two groups did show slight improvement in the spring, as would be expected in the new procedure, this change was not involved in the contrast which appeared statistically.

While the change in massing of training might have a slight impact on the over-all performance of all the groups, it is not clear why the presence or absence of a text would have been affected by this change.

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[8]The training in the spring semester ceased before spring vacation and the recall test occurred at the conclusion of spring vacation; in the fall no vacation occurred during the delay between training and the recall test.

The third difference, the amount of outside attention given during the training period, may be a more likely reason. While formal monitoring was the same for both fall and spring groups, in the fall there was present at many of the training sessions, in addition to the laboratory assistant, at least one senior project member who listened for and made notes of phonological mistakes the students were making and also watched for and made notes of student reactions to the experimental situation and the lesson materials. Although these investigators never said anything, the laboratory equipment is such that a student was aware of being monitored and it was also possible, at times, for the students to see the investigator making notes. In the spring, a project member was present much less frequently.

In addition to the reduction in the spring in monitoring time for the project members, was the reduction in the number of recordings, during the training hours, of student performance. The students knew when they were being recorded because their microphones would be turned on manually and they themselves operated the control buttons for the recordings.

If we ask why reading was more facilitative in the spring, one explanation, then, may lie in the monitoring and recording differences. Not only does a text permit rehearsal and review, it also provides a visual focus for attention, thus possibly reducing boredom and distractability. A number of students, on the comment sheets filled out at the end of the experiment, complained of difficulty in concentrating, of being distracted by the surroundings (the most common distraction being the perforations in the material the laboratory booths were constructed of), and of physical discomfort including having headaches and being excessively warm. The spring non-reading groups then, not only had no reinforcement from a text, but also lacked possible reinforcement from monitoring and recording. The spring and fall groups without text differed somewhat more for groups I and II than for group III. This last group, having learned translations before exposure to sound sequence practice, could at least rehearse the translations.

For Test 2, but not for Test 3, there was a difference in the relative success of the groups differing in order of presentation, in the two seasons. Group I with text was very low in the fall; Group II without text was lowest in the spring. The shift in position of these groups seems to account for the interaction of season with order of presentation. If the explanation in terms of boredom and distractability is correct, we would expect the change in monitoring to affect Group II the most since it had the longest practice before exposure to meanings. The training procedure Group II underwent might be the most sensitive to social reinforcement.

If we examine the profiles for the different test sections for groups I with text and II without text, it appears that the change in the spring was general. The profiles are shown on Figures 1-4.

The questions under study in this experiment were (1) what effect does the presence or absence of text have in the early phase of language study and (2) what is the effect of the order of presentation of translation? On the basis of the examination, here presented, of the test results, we can say that there is a slight benefit to pronunciation in a student's having a text, but no discernible impact on any skills in variations in order of presentation of translation.

We predicted that, for the most part, the notation employed in this experiment would result in facilitation in learning phonology for students with a text, as well as facilitation in learning of syntax and meanings. There was no reliable test for any of the paticular phonological skills, however, so the following examples are merely illustrative. A longer test would be necessary for adequate exploration of the issue.

At the end of the training periods, of the three questions concerned with phonological learning, the text had no discernible effect on the students' ability to recognize phonemic distinctions (phonological discrimination: Q1, Q2-items 17-26); there was no over-all significant difference in the students' ability to produce phonemic distinctions and allophonic variations (phonological accuracy: Q8-spring only); and the results of the articulatory fluency question (Test 3, Q7) showed some evidence that the text did help the students in the production of sentences of increasing length.

Although in over-all performance on question 8 there were no significant differences, some of the items did produce interesting developments for which it would be worthwhile to gather more data. We predicted that a text should improve phonological learning for distinctions which are phonemic, but acoustically difficult. Taking the contrast /d/ vrs. /ḍ/ as a case in point, in an item involving /hoteḍu/, "hotel", the reading and non-reading groups produced approximately the same number of errors. However of the nine errors the group with text made, six errors involved the substitution of /d/ for /ḍ/ whereas /d/ did not appear in any of the eight errors made by the group without text, the substitutions in this case being English /l/ or /r/. This finding raises some questions about the use of diacritics.

Because of the distributional differences between Japanese and English of pitch and stress, we suggested that the marking of high pitch in the pronunciation drills should act as a reinforcement for the students with text, and, indeed, the reading group had the highest scores on the pitch contrast in question 8.

We also thought that, because our transcription did not indicate that every syllable in Japanese has equal stress, there might be more of a tendency for the group with text, because of American reading habits, to superimpose English stress patterns onto the Japanese they learned. The item in Question 8 which tested for stress did not support this supposition. It was a weak test, concerning changes in the vowel qualities of a four-syllable sequence on one test item.

We suggested that phonological learning might be impaired by the presence of a text if the symbol system employed does not signal segmental allophonic variations. Although we included symbols which represented allophones, we did not attempt to represent the allophones of /n̄/, the "syllabic" nasal phoneme. The items on question 8 which forced the production of this phoneme did not develop any differentiation between the group with text and the group without text, but these differences are hard to hear on tape.

Again, we predicted that, because of the conflict with American reading habits, our text might impair phonological learning where the transcription represented sounds different from those appropriate to the same English text symbols. We took as an example the writing of Japanese long consonants as double consonants. On question 8 the reading groups had better scores than the non-reading groups on the items involving consonant length.[9]

The reader should bear in mind that the observations just made on phonological learning can only be considered anecdotal since the data on which these observations were made is insufficient, involving in some cases only one item.

The prediction that a text would facilitate the learning of meanings and syntax, but might impair certain aspects of phonological learning, was confirmed in the spring, but the lack of difference in the fall suggests that the effects of a text may be important only under special circumstances.

As far as the effect of the order of presentation of translations is concerned, we predicted that the alteration in order of presentation would have different effects on phonological learning and other skills: delayed introduction of translations would facilitate learning of phonological discriminations and pronunciation, whereas introduction of translation from the beginning should facilitate the learning of meanings.

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[9]The groups with text also had better scores on items involving vowel length, a feature which is allophonic, not phonemic, for general American.

There was no indication in the final results that variations in order of introduction of translations had an impact.

During the course of the training periods monitors noted that a student who could produce a good Japanese intonation pattern when the translation was absent adopted the intonation pattern of the English translation when it was present. They also noted that once a student became aware, through the translation, that some of the sound sequences were English loan words (e.g. peeji, "page"; hotedu, "hotel") his pronunciation of some of these words got worse. However, the order of introduction of the translations had no effect on these phonological problems, or any others. The magnitudes of delay were, of course, small. It is possible that delay of greater magnitudes might have an impact.

It is a possibility that, in conjunction with lack of a text and reduced social reinforcement, delayed training in meanings, when translation is the vehicle for teaching meanings, may impair all types of learning tested. This was the situation of group IIR̄ in the spring. This condition seems to be the most responsive to monitoring since our results show very high performance of group IIR̄ in the fall and the lowest performance in the spring.

4.4. Suggestions for further research. Our experience with this language learning experiment has pointed up the following areas in which further investigation might be fruitful.

4.4.1. The effect of text. Since a trend in the results of the present experiment suggests that the effects of a text as an aid to language learning may be important only under special circumstances, it would be useful to determine what those effects are on various skills under other conditions and for other languages and writing systems.

It would also be interesting to determine whether the trend we found exists not only in the age group our students represented but also among child and adult age groups. The college students participating in our experiment were between 18 and 23 years of age. It might be expected that the effects of a text, given other special conditions, would vary according to the age of the subjects examined. It would also be of value to examine the merits of different types of symbol systems for reducing errors in pronunciation. Such issues as the use of different symbols for allophones, rather than a phonemic system, and the effects of the use of diacritics need empirical testing.

4.4.2. Retention of material learned. In the present investigation after cessation of training there was significantly less retention of material learned with text. If retention of material learned with and without text could be measured at regular intervals over a long period of time, it might be possible that the rate of loss of learned material would indicate that rraining which appeared superior on the basis of tests administered during the

actual learning period should be abandoned.

It would be especially interesting to know the nature of the material which is forgotten, as well as the pattern in which the loss occurs. The specific items for which retention proved low might give valuable suggestions for the creation of teaching materials.

4.4.3. The analysis of error trends. One of the test questions used in this study, the question concerned with articulatory fluency, required that the subjects, after hearing a sentence once, pronounce it twice. There was a total of twenty sentences of increasing length. The students' imitations were scored for a variety of types of errors: transposition, insertions, omissions, garbles, and substitutions of words or phrases. As would be expected, there was an obvious improvement between the performance at the tenth hour and that at the twenty-ninth hour. However, there was one exception: in all cases except that of group IIIR the number of substitutions had increased by the time Test 3 was given.

The obvious comment is that the student, as he acquires more grammatical knowledge and a larger vocabulary, has more choices to make and there are more items which can be exchanged in any particular position in an utterance. However, why was there no increase in the other types of errors?

For the most part, the surprising increase in the number of substitutions was the result of a confusion between three particular items, "wa", "o", and "no". These occur after substantives and identify the topic, the object, and possession or attribution respectively. They are function words rather than content or lexical words. Not only is there the possibility of phonological confusion for these items, there is also the possibility of tactic confusion as they serve as markers of specific syntactic functions and can all be preceded by nouns. The student became less able to make the necessary distinctions between these items as his knowledge of the language developed. Why might this be so?

We have referred in the introduction to studies of familiarization that indicate that familiarization results in intra-list interference in recall. Also, it is known that responses which can occur in the same context commonly interfere with each other during learning. This interference would increase at first to an asymptote, and decrease as differentiation occurs. The effect would be less where more differential cues are available. For the specific items mentioned above, the aid of difference in referential meaning is absent. However, in group IIIR which had the prior learning of sentence meanings, and also a text, which may have helped in the retention of meanings, the substitution errors were minimal.

Because of the possibilities of phonological and tactic interference and lack of adequate differential cues, it seems that the grammar drills on the items caused the students to become less able to handle the structures as knowledge of other aspects of the language developed. One of the basic grammar drills in our lesson materials was the substitution drill, popular in current drill materials. This drill type rigidly controls the environment of an insertion slot in a pattern drill. It may be that a systematic introduction of a larger number of vocabulary items into the grammatical structures forming the environment for the substitution slot would have facilitated the student's ability to keep distinct the three items so frequently substituted for each other.

While we cannot now determine whether the increase in number of substitutions is the result of conditions peculiar to Japanese structure or to the particular drills used, it does hint that languages and lesson materials should be tested for the types of error which increase with the student's experience.

4.4.4. Pronunciation tests. An important technical difficulty both in research and in evaluation of student performance in ordinary teaching situations is the development of methods for judging pronunciation. Both the teacher and the student have auditory biases which must be compensated for in devising test items. Further, anyone who has had experience in continuous judgement of "accents" discovers that his frame of reference shifts within a very short time so that he either becomes more tolerant or less tolerant of phonetic free variation than he would be with monolinguals. The great importance of this problem in both teaching--where adequate reinforcement of pronunciation practice is at issue--and in research implies that more efforts should be made at finding generally applicable techniques.

The great time and expense required to obtain reliable evaluation of specific pronunciation skills has, for this study as well as others, reduced exploration of specific types of pronunciation difficulties.

4.4.5. Discrimination tests. Somewhat fewer problems appear in testing recognition, or ability to discriminate sounds. We attempted to use ability to discriminate minimally different pairs of items as one measure of student progress in learning Japanese sound sequences. Certain unpredictable scores on the trial group tests suggested that simple discrimination of identities or differences is not really simple at all. Given any pair of minimally different items it is possible that one of the pair may frequently or even always be more difficult to recognize than the other. In a pair where the difference is acoustically difficult, one item may already have been identified by the student as equivalent to a certain sound in his native language. When the correct answer is this item there is a possibility of getting relatively higher correct scores than when the correct match contains the sound which varies more

markedly from the native sound. Thus, there seems to be a tendency to choose as correct that member of a difficult pair which has the greatest similarity to the student's native language. Moreover, if the test question takes the form

súji

a. súji

b. súuji

where the student is to match "súji" with either "a" or "b", it is possible that position "a" is easier to recognize than "b" since the memory of the initial stimulus is interrupted by item "a" and may be confused with "a" by the time "b" is given. Also, mediation by the student's own pronunciation, and assimilation to English, increases with the delay.

In the discrimination test devised, each pair occurred twice and items to be matched were varied in all the possible ways. A student was required to identify correctly both occurrences of one pair in order to receive a positive score. This technique is standard for tests in which there is likely to be a response bias; thus if a student consistently identifies both A and B as versions of A, he does not significantly differ in his response to them any more than if he randomly assigns A and B to classes A and B.

While the technique of scoring in terms of paired items successfully solves a testing problem, it leaves unexplored the bases for the response preferences which appear. Further study of these bases and improvements on discrimination test designs would be a step toward obtaining a truly reliable evaluation of at least one pronunciation skill, phonological discrimination.

4.4.6. The teaching of meaning. The results for this project apply only to limited ways of teaching meaning. Two methods were used: translation, and context, though the latter was very abbreviated. Would the results be the same if meanings were taught through non-verbal means such as films, pictures, and situational usage? Visual materials would, in the text-less situation, reduce the boredom which seemed to occur, according to student comments. If used instead of translations they would also reduce the tendency on the part of the learner to superimpose the phonological patterns of his own language into the second language. On the other hand, attention to pictures during the time the student was listening to the second language would interfere with some of the advantages to discrimination and memory which we have suggested accrue to those using a text, especially in a minimal monitoring condition. Finally, we may assume that any findings involving the teaching of meanings must be limited in the age group to which they are generalized, until

further research at other ages occurs. It is obvious that the greater verbal skill of adults makes the techniques appropriate for them less appropriate for children.

4.4.7. Study of monitoring. After the fact, this research revealed marked effects of a shift in the intensity of monitoring and recording of student performance. The difference was not due to any change in the policy of giving no correction; it seems to reflect a more general change in the atmosphere of interest and attention. It is obvious that the increased use of laboratory techniques calls for research on the effects of varying systems of monitoring.

4.5. Implications for the teacher. The teacher is reminded that the results of the experiment conducted are relevant only to the average college student age group, not to elementary school students, and only tentatively to high school students or adults beyond college age; the relation between the languages used and the writing system used is a special one needing further study with other languages and other symbol systems; the teaching method was basically audio-lingual, with no classroom instruction--all training taking place in the language laboratory. However, from our experience with the experiment can be drawn a few comments which may be of general use to a teacher.

4.5.1. Order of presentation. Should the teacher conclude from this experiment that it makes no difference when pronunciation drill is given? It was found that the order of presentation of material with and without translations had no effect on learning, either of meanings, or of pronunciation.

In some teaching materials, there is little opportunity for the student to attend to phonological contrasts. Such materials are designed to teach basic vocabulary and syntax alone, and pronunciation practice is set aside for special times in the semester or in the day. We may very well suppose that delay in pronunciation practice, under such conditions, might produce drastic results. But our experiment did not test this possibility.

The teaching materials employed in this experiment were contrastive thoughout. Whether meanings were given or not, the student was forced to attend to minimal sound differences. Under such conditions, when there is emphasis throughout on sound contrasts, it seems to make no difference when time is set aside for special attention to sound sequences apart from meanings.

During the course of the experiment, including the pretests, monitors observed that all of the students made a variety of errors in pronunciation, and many were gradually corrected. This spontaneous improvement was noteworthy, since the monitors were not allowed to make corrections. It occurred in all groups.

The absence of consistent differences between groups varying in the order of presentation of drills suggests that when the amount of practice of a given type is held constant, change in other variables has slight impact. We cannot conclude that the gross neglect of any area of the linguistic system for a long period of time can be easily corrected. But this is a special situation. If students have average language learning aptitude, if the design of the lesson material, whether for classroom use or laboratory use, has taken into consideration the students' ability to teach and correct themselves, and if the lesson material adequately drills all the areas of the linguistic system to be learned, the amount of practice rather than order should play the major role in facilitating the students' learning.

4.5.2. Social reinforcement. The results of our investigation indicate that students are responsive to social reinforcement, especially in a language training situation which removes one of the three basic data: the sound sequences, the meanings, the written symbolization.

The social reinforcement in this study consisted of monitoring done by the regular laboratory attendant and by one of the project's investigators who observed student performance and reaction, and the recording during training sessions of student performance on particular drills.[10]

Although we can make no definite statements concerning the efficacy of laboratory monitoring or discuss the possible effects of various monitoring systems, our results imply that an active interest during laboratory training periods in how and what students are doing does play a role in maintaining the students' interest and attention.

4.5.3. Visual stimulation. The removal of visual stimulation may hamper learning when a student's motivation is not considerably bolstered. Many of our students, the frequency being highest among those without text, expressed regret that there had been no teacher, saying that if a teacher had been present they could have seen his facial expression, his gestures, and also how he made the sounds they were learning. These comments indicate that the teacher would have provided a visual source of information the tape recordings and text do not. The remarks also imply that the teacher would have been something relevant to look at: he would have provided a visual focus of attention.

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[10]These recordings were made for the purpose of collecting data on student performance and reaction. At no time was a student allowed to play back his recording.

A text also is a visual source of information and provides a visual focus of attention. Anecdotal support of this point is available.

One student, who had gone through the experiment without the text, expressed a great desire, after the course was over, to have a copy of a lesson or two. When he was given a copy and he had looked at it, his first comment indicated that he had interpreted Japanese words containing long consonants as two-word compounds. His interpretation was based not on what he had learned about Japanese but what he knew about English in which such a double consonant usually appears only at morpheme boundaries, and particularly in compounds.

A frequent complaint of the students without text was that the perforations in the study booths distracted their attention from the lesson. One student complained that the dots would begin to make patterns and the patterns would shift, causing a distracting sense of movement. In another case, the monitor observed that a student usually kept his eyes closed.[11]

It would seem then that for the student accustomed to learning from books, one of the problems in language study without a text is simply that of not knowing what to do with his eyes which he is accustomed to using as a source for primary information. One may infer that in language courses which emphasize aural-oral laboratory drill, consideration should be given to the possible effects of the lack of visual stimulation, not only visual stimulation which provides information, but also that which provides a focus of attention.

4.5.4. Notation systems. While the results of this experiment suggest that under some conditions the use of a text improves learning, for college students, teachers should generalize these conclusions with caution. The orthography used employed familiar symbols for the most part. Presumably unfamiliar symbols would themselves constitute a special learning hurdle which might interfere with learning of other aspects of the language if introduced early. That is, it is likely that facilitation from the use of texts only occurs if the text looks familiar and can be read almost immediately without special training. Secondly, the benefit from the use of texts may not be as great if there are many differences in the phonemic systems of the first and second language. We have discussed some of these complications in 1.1.

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[11] Possibly, the student, who made excellent progress without a text, used this method to effectively eliminate a source of interference.

Finally, a special difficulty is introduced by languages such as English and French which employ familiar symbols but have irregular spelling. There is no reason, on the basis of our findings, to believe that early introduction of texts in irregular orthographies would facilitate learning.

4.6. Summary. College student acquisition of a second language under oral-aural conditions was studied in this experiment. The students were given the first 30 hours of a course in Japanese, presented entirely on tape with no correction by a monitor. Lessons were constructed on a contrastive basis, with the emphasis on the learning of phonological and grammatical contrasts in Japanese rather than on acquisition of basic vocabulary.

The purpose of the experiment was the comparison of three orders of arrangement of material, and the assessment of the effects of having a text available. The changes on order of arrangement were made while taking great care to insure that exactly the same lessons were given to all groups for the same periods of time. Two groups received training in sound sequences before they were exposed to translations of the sequences; in a third group training in meanings preceded drill in sound sequences. Two of the groups were contrasted in the length of the period before meanings were introduced. None of the variations appeared to have a direct effect on learning or recall of pronunciation, syntax, or meanings. We may infer that differences found in research on methods are often due to changes in the amount of time allocated to different types of practice, rather than to the order in which skills are taught. When the amount of practice is rigidly controlled, the variations in order for the small time spans employed in this experiment had no impact.

There were indications that students may benefit from training with a text before them, especially if they are trained in a laboratory with reduced motivation and reduced social stimulation. In the second section of the experiment, when monitoring was reduced, a text produced more benefit than in the first semester. Articulatory fluency as well as the learning of meanings and syntax appeared to benefit from the availability of a text. The text employed in the experiment had a normalized phonemic notation with familiar symbols, so it did not require learning many new reading habits. The advantage accruing from use of a text might be lost if the system of notation is complex or fails to signal consistently important aspects of the utterance pattern.

APPENDIX

APPENDIX A

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APPENDIX B

LESSON - TEST PLAN

FALL 1961 GROUPS

Groups: IR̄ (No Printed Text) and IR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1-	1	3-	3	5-	5	1	3	5	T	8-	8	11-	11	14-	14	8	11	14	T	17-	17	20-	20	23-	24	19	22	T	T
Lesson	2-	2	3A-	3A	6-	6	2	3A	6	ES	9-	9	12-	12	15-	15	9	12	15	ES	18-	18	21-	21	24-	17	20	23	ES	ES
	2A-	2A	4-	4	7-	7	2A	4	7	T	10-	10	13-	13	16-	16	10	13	16	T	19-	19	22-	22	23	18	21	24	T	T

Groups: IIR̄ (No Printed Text) and IIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1-	3-	5-	1	3	5	1	3	5	T	8-	11-	14-	8	11	14	8	11	14	T	17-	20-	23-	18	21	24	19	22	T	T
Lesson	2-	3A-	6-	2	3A	6	2	3A	6	ES	9-	12-	15-	9	12	15	9	12	15	ES	18-	21-	24-	19	22	17	20	23	ES	ES
	2A-	4-	7-	2A	4	7	2A	4	7	T	10-	13-	16-	10	13	16	10	13	16	T	19-	22-	17	20	23	18	21	24	T	T

Groups: IIIR̄ (No Printed Text) and IIIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1	3	5	1	3	5	1-	3-	5-	T	8	11	14	8	11	14	8-	11-	14-	T	17	20	23	18	21	24	19-	22-	T	T
Lesson	2	3A	6	2	3A	6	2-3A-		6-	ES	9	12	15	9	12	15	9-	12-	15-	ES	18	21	24	19	22	17-	20-	23-	ES	ES
	2A	4	7	2A	4	7	2A-4-		7-	T	10	13	16	10	13	16	10-	13-	16-	T	19	22	17	20	23	18-	21-	24-	T	T

Lessons followed by a "minus" are those in which no English translations are given. Lessons not so marked have English glosses given with the Japanese.

APPENDIX C

LESSON - TEST PLAN

SPRING 1962 GROUPS

Groups: IR̄ (No Printed Text) and IR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1-	1	3-	3	5-	5	1	3	5	T	8-	8	11-	11	14-	14	8	11	14	T	17-	17	20-	20	23-	24	19	22	T	T
Lesson	2-	2	3A-	3A	6-	6	2	3A	6	ES	9-	9	12-	12	15-	15	9	12	15	ES	18-	18	21-	21	24-	17	20	23	ES	ES
	2A-	2A	4-	4	7-	7	2A	4	7	T	10-	10	13-	13	16-	16	10	13	16	T	19-	19	22-	22	23	18	21	24	T	T

Groups: IIR̄ (No Printed Text) and IIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1-	3-	5-	1	3	5	1	3	5	T	8-	11-	14-	8	11	14	8	11	14	T	17-	20-	23-	18	21	24	19	22	T	T
Lesson	2-	3A-	6-	2	3A	6	2	3A	6	ES	9-	12-	15-	9	12	15	9	12	15	ES	18-	21-	24-	19	22	17	20	23	ES	ES
	2A-	4-	7-	2A	4	7	2A	4	7	T	10-	13-	16-	10	13	16	10	13	16	T	19-	22-	17	20	23	18	21	24	T	T

Groups: IIIR̄ (No Printed Text) and IIIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1	3	5	1-	3-	5-	1	3	5	T	8	11	14	8-	11-	14-	8	11	14	T	17	20	23	18-	21-	24-	19	22	T	T
Lesson	2	3A	6	2-	3A-	6-	2	3A	6	ES	9	12	15	9-	12-	15-	9	12	15	ES	18	21	24	19-	22-	17	20	23	ES	ES
	2A	4	7	2A-	4-	7-	2A	4	7	T	10	13	16	10-	13-	16-	10	13	16	T	19	22	17-	20-	23-	18	21	24	T	T

Lessons followed by a "minus" are those in which no English translations are given. Lessons not so marked have English glosses given with the Japanese.

APPENDIX D

Included herein are glossed (G) and unglossed (Ḡ) versions of sample drills. The drill types used to introduce, drill, and review pronunciation problems and grammatical patterns are as follows: repetition (including series repetition, and dialogue repetition), contrast, discrimination, anticipation (including dialogue anticipation, dialogue anticipation (reply only), dialogue anticipation (1st utterance only), and partial anticipation), dialogue reply, frame (additive and subtractive), combinative, transformation, and question-answer.

1. Pronunciation Drills.

1.1. Repetition Drill (G): You will hear an item spoken in English and then in Japanese. Immediately after the Japanese there will be a pause in which you are to repeat the Japanese. Do not repeat the English.

flour	kó	____
incense	kóo	____
a voice	kóe	____
a carp	kói	____
beg	kóu	____
an armature	kóa	____

1.2. Repetition Drill (Ḡ): You are going to hear Japanese utterances. After each utterance there will be a pause in which you are to repeat the Japanese.

kó	____
kóo	____
kóe	____
kói	____
kóu	____
kóa	____

1.3. Series Repetition Drill (Ḡ): You will hear two or more items pronounced one after another. In the pause provided you are to pronounce the entire series.

kí	é	ná	kó	sú	____
kíi	ée	káa	kóo	súu	____
sú	súu	sú			____
kó	kóo	kó			____
ná	káa	ná			____
é	ée	é			____
kí	kíi	kí			____
ée	é	ée			____
kíi	kí	kíi			____
kóo	kó	kóo			____
káa	ná	káa			____
súu	sú	súu			____
kíi	ée	káa	kóo	súu	____
kí	é	ná	kó	aú	____

There is no drill of exactly equivalent design for the lesson with glosses.

1.4. Contrast Drill (G): First you will hear an item spoken in English and then in Japanese. Next there will be a pause in which you are to repeat the Japanese. Then you will hear a new English utterance with its Japanese equivalent. You are to repeat the Japanese. Finally you will hear the pair of Japanese utterances. You are to repeat the pair.

a tree	kí		
air	ki		
	kí	ki	
a picture	é		
a handle	e		
	é	e	
vinegar	sú		
a bird's nest	su		
	sú	su	
a pipe	tói		
a question	toí		
	tói	toí	
a voice	kóe		
fertilizer	koé		
	kóe	koé	
a nose	hána		
a flower	haná		
	hána	haná	
an oyster	káki		
a persimmon	kakí		
	káki	kakí	
a railroad station	éki		
a fortune	ekí		
	éki	ekí	
Mt. Fuji	fúji		
wisteria	fují		
	Fúji	fují	

1.5. Contrast Drill (G̃): You will hear two utterances, each with a pause for you to pronounce the item. Then you will hear the pair together. You are to pronounce the pair.

kí		
ki		
kí	ki	———
é		
e		
é	e	———
sú		
su		
sú	su	———
tói		
toí		
tói	toí	———
kóe		
koé		
kóe	koé	———
hána		
haná		
hána	haná	———
káki		
kakí		
káki	kakí	———
éki		
ekí		
éki	ekí	———
fúji		
fují		
fúji	fují	———

1.6 Discrimination Drill (G): You will hear an item spoken in English. Then you will hear two items in Japanese. You are to pronounce the Japanese item that is the equivalent of the English. Then you will hear the correct Japanese item. Repeat the Japanese.

a seat	séki	sékki	———	(At	———
the national treasury	kóko	kókko	———	this	———
a riot	íki	íkki	———	point	———
chinaware	séto	sétto	———	you	———
individually	kóko	kókko	———	will	———
summertime	káki	kákki	———	hear	———
a movie set	séto	sétto	———	the	———
a path	íto	ítto	———	answer.	———
startled	háto	hátto	———		———
the year's end	séki	sékki	———	Repeat	———
thread	íto	ítto	———	it.)	———
a breath	íki	íkki	———		———
a good opportunity	káki	kákki	———		———

1.7. Discrimination Drill (G): You will hear two Japanese words and then a third Japanese word. There will be a pause in which you are to indicate whether the third word that you heard is the same as the first or the second word. You will then hear the choice that you should have made. Here is an example in English:

A. hear B. ear ear____ B. ear
Your response should have been B, (ear).

A.	B.			
íto	ítto	(here	____	(At ____
séto	sétto	you	____	this ____
háto	hátto	will	____	point ____
kóko	kókko	hear	____	you ____
káki	kákki	the	____	will ____
séki	sékki	item	____	hear ____
íki	íkki	to	____	the ____
káki	kákki	be	____	answer. ____
séto	sétto	identified.)	____	____
kóko	kókko		____	Repeat ____
íki	íkki		____	it.) ____
háto	hátto		____	____
íto	ítto		____	____

2. Grammar Drills

2.1. Repetition Drill (G):

Mr. Konno is looking at it.	Koñno sañ wa mite imasɤ.
Mr. Konno has gone.	Koñno sañ wa itte imasɤ.
Mr. Konno has gone to the bookstore.	Koñno sañ wa hoñya e itte imasɤ.
Mr. Konno is looking at the bookstore.	Koñno sañ wa hoñya o mite imasɤ.
Mr. Konno is looking at the railroad station.	Koñno sañ wa eki o mite imasɤ.
Mr. Konno has gone to the railroad station.	Koñno sañ wa eki e itte imasɤ.
Mr. Konno has gone to a movie.	Koñno sañ wa eiŋa e itte imasɤ.
Mr. Konno is looking at the movie.	Koñno sañ wa eiŋa o mite imasɤ.
Mr. Konno is looking at the bank.	Koñno sañ wa giñkoo o mite imasɤ.
Mr. Konno has gone to the bank.	Koñno sañ wa giñkoo e itte imasɤ.
Mr. Konno has gone to the park.	Koñno sañ wa kooeñ e itte imasɤ.
Mr. Konno is looking at the park.	Koñno sañ wa kooeñ o mite imasɤ.
Mr. Konno is looking outside.	Koñno sañ wa soto o mite imasɤ.
Mr. Konno has gone outside.	Koñno sañ wa soto e itte imasɤ.
Mr. Konno has gone to the hotel.	Koñno sañ wa hoteḍu e itte imasɤ.
Mr. Konno is looking at the hotel.	Koñno sañ wa hoteḍu o mite imasɤ.
Mr. Konno is looking at the school.	Koñno sañ wa gakkoo o mite imasɤ.
Mr. Konno has gone to school.	Koñno sañ wa gakkoo e itte imasɤ.

(for directions see 1.1)

2.2 Repetition Drill (Ḡ):

Koñno sañ wa mite imasɣ.
Koñno sañ wa itte imasɣ.
Koñno sañ wa hoñya e itte imasɣ.
Koñno sañ wa hoñya o mite imasɣ.
Koñno sañ wa eki o mite imasɣ.
Koñno sañ wa eki e itte imasɣ.
Koñno sañ wa eiŋa e itte imasɣ.
Koñno sañ wa eiŋa o mite imasɣ.
Koñno sañ wa giñkoo o mite imasɣ.
Koñno sañ wa giñkoo e itte imasɣ.
Koñno sañ wa kooeñ e itte imasɣ.
Koñno sañ wa kooeñ o mite imasɣ.
Koñno sañ wa soto o mite imasɣ.
Koñno sañ wa soto e itte imasɣ.
Koñno sañ wa hoteḍu e itte imasɣ.
Koñno sañ wa hoteḍu o mite imasɣ.
Koñno sañ wa gakkoo o mite imasɣ.
Koñno sañ wa gakkoo e itte imasɣ.

(for directions see 1.2)

2.3. Series Repetition Drill (Ḡ):

ite	imasɣ	_____
mite	mimasɣ	_____
itte	ikimasɣ	_____
kɣte	ikimasɣ	_____
šɣte	itašimasɣ	_____
kɣtte	kiḍimasɣ	_____
kɣte	ikimasɣ	_____

imasɣ	mimasɣ	ikimasɣ	____
mimasɣ	ikimasɣ	itašimasɣ	____
ikimasɣ	itašimasɣ	kiḍimasɣ	____
kiḍimasɣ	itašimasɣ	ikimasɣ	____
itašimasɣ	ikimasɣ	mimasɣ	____

(for directions see 1.3)

There is no drill of exactly equivalent design for lessons with glosses.

2.4. Dialogue Repetition Drill (G): You will hear a pair of utterances spoken in English and then in Japanese. Immediately after the Japanese there will be a pause in which you are to repeat the Japanese.

Is Mr. Shiga opening a bottle?	Šiŋa sañ wa biñ o akete imasɣ ka?
Yes, he is.	Hai, akete imasɣ.
Does Mr. Konno know Mr. Shiga?	Koñno sañ wa Šiŋa sañ o šɣtte imasɣ ka?
No, he doesn't.	Iie, šɣtte imaseñ.

Where has the stationmaster gone?	Ekʹčoo wa doko e itte imasʹ ka?
He's gone to Tokyo.	Tookyoo e itte imasʹ.
When will the stationmaster return?	Ekʹčoo wa itsu kaẹdimasʹ ka?
He'll return tomorrow.	Ašʹta kaẹdimasʹ.
Is Mr. Shiga at home?	Šiŋa sañ wa uči ni imasʹ ka?
No, he isn't.	Iie, imaseñ.

2.5. Dialogue Repetition Drill (G): In the following pairs of Japanese sentences, the second of each pair is a correct reply to the first. The instructor will pause after each pair while you repeat them.

Šiŋa sañ wa biñ o akete imasʹ ka?
Hai, akete imasʹ.

Koñno sañ wa Šiŋa sañ o šʹtte imasʹ ka?
Iie, šʹtte imaseñ.

Ekʹčoo wa doko e itte imasʹ ka?
Tookyoo e itte imasʹ.

Ekʹčoo wa itsu kaẹdimasʹ ka?
Ašʹta kaẹdimasʹ.

Šiŋa sañ wa uči ni imasʹ ka?
Iie, imaseñ.

2.6 Contrast Drill (G): Note that the contrasted items are related.

look (gerund)	mite	___	
look	mimasʹ	___	
	mite mimasʹ		___
stay (gerund)	ite	___	
stay	imasʹ	___	
	ite imasʹ		___
go (gerund)	itte	___	
go	ikimasʹ	___	
	itte ikimasʹ		___
come (gerund)	kʹte	___	
go	ikimasʹ	___	
	kʹte ikimasʹ		___
cut (gerund)	kʹtte	___	
cut	kiḍimasʹ	___	
	kʹtte kiḍimasʹ		___
do (gerund)	šʹte	___	
do	itašimasʹ	___	
	šʹte itašimasʹ		___

There is no drill of exactly equivalent design for lessons without glosse

(For directions see 1.5)

2.7 Anticipation Drill (G): You will hear an English utterance. There will be a pause in which you are to give this utterance in Japanese. Then you will hear the correct Japanese. Repeat the Japanese.

Yes, he's looking at it.	___	(At	___
No, he isn't looking at it.	___	this	___
Yes, it is.	___	point	___
No, it isn't.	___	you	___
No, he hasn't come.	___	will	___
No, he isn't opening it.	___	hear	___
Yes, he's doing it.	___	the	___
No, he hasn't gone.	___	answer.	___
Yes, he's cutting it.	___		___
Yes, he's come.	___	Repeat	___
Yes, he's opening it.	___	it.)	___
No, he isn't cutting it.	___		___
Yes, he knows him.	___		___
No, he doesn't know him.	___		___
Yes, he's come.	___		___
No, he isn't doing it.	___		___

2.8 Anticipation Drill (G): You will hear an item. There will be a pause in which you are to supply the sentence in which the item occurred. You will then hear the sentence. Repeat it.

Šiŋa sañ	___	(At	___
iči peeji no e	___	this	___
setto no e	___	point	___
akemasɤ	___	you	___
soo	___	will	___
nañ no e	___	hear	___
		the	
akete kudasai	___	answer.	___
e desɤ ka?	___		___
e o mite kudasai	___		___
hoñ	___	Repeat	___
nañ	___	it.)	___
peeji	___		___
setto	___		___
mite kudasai	___		___
soo desɤ	___		___
iči	___		___
mimasɤ	___		___
akemasɤ	___		___

2.9. Dialogue Anticipation Drill (G): Following a pair of English utterances there will be a pause in which you are to give both the utterances in Japanese. Do not repeat the English. Then you will hear the correct Japanese. Repeat the Japanese.

Is it a picture
Yes, it is. ——

Is it a picture?
No, it isn't. ——

Is it a picture of a movie set?
Yes, it is. ——

Is it a picture of a movie set?
No, it isn't ——

Is this a picture of a movie set?
Yes, it is. ——

Is this a picture of a movie set?
No, it isn't. ——

Is this a picture?
Yes, it is. ——

Is this a picture?
No, it isn't. ——

(At this point you will hear the answer. Repeat it.) ——

There is no drill of exactly equivalent design for lessons without glosses

2.10. Dialogue Anticipation Drill (Reply Only) (G): You will hear a pair of English utterances followed by the Japanese for the first sentence of the pair. You are to supply the Japanese reply. You will then hear the reply you should have made. Repeat it in the following pause.

Is Mr. Shiga at home?
No, he isn't.
Šiŋa sañ wa uči ni imasɣ ka? ——

Where's Mr. Shiga gone?
He's gone to the bank.
Šiŋa sañ wa doko e itte imasɣ ka? ——

Where is Mr. Konno?
Mr. Konno's at the park.
Koñno sañ wa doko ni imasɣ ka? ——

Is the stationmaster in Hokone?
Yes, he is.
Ekɣčoo wa Hokone ni imasɣ ka? ——

Where's the stationmaster gone?
He's gone to Hakone.
Ekɣčoo wa doko e itte imasɣ ka? ——

(At this point you will hear the answer. Repeat it.) ——

There is no drill of exactly equivalent design for the lessons without glosses.

2.11. Dialogue Anticipation Drill (First Utterance Only) (Ḡ): You will hear an answer to a question. The question will be either a 'naⁿ' question or a 'koḍe wa nan' question. Supply the question which produced the given answer. You will then hear the question and the answer. Repeat them.

E desɣ.	___	(At	___
Koḍe wa e desɣ.	___	this	___
Koḍe wa setto no e desɣ.	___	point	___
Setto no e desɣ.	___	you	___
Hana desɣ.	___	will	___
Koḍe wa hana desɣ.	___	hear	___
Koḍe wa hanna no e desɣ.	___	answer.	___
Hana no e desɣ.	___	Repeat	
	___	it.)	___

There is no drill of exactly equivalent design for the lessons with glosses.

2.12. Partial Anticipation Drill (G): You will hear an item in Japanese which you have practiced as part of a longer utterance. Then you will hear the English equivalent of the utterance. There will be a pause during which you are to give the entire utterance in Japanese. You will then hear the correct Japanese. Repeat the Japanese.

Šiŋa san Mr. Shiga, please open your book.	___	(At this	___
iči peeji no e Please look at the picture on page one.	___	point you	___
setto no e It's a picture of a movie set.	___	will hear the	___
naⁿ no e What is it a picture of?	___	answer. Repeat	___
		it.)	
soo That's right.	___		___
akemasɣ All right, I'll open it.	___		___
akete kudasai Mr. Shiga, please open your book.	___		___
setto It's a picture of a movie set.	___		___
e o mite kudasai Please look at the picture on page one.	___		___
soo desɣ That's right.	___		___

There is no drill of exactly equivalent design for the lessons without glosses.

2.13. Dialogue Reply Drill (G): You will hear an utterance in Japanese. Repeat it and give the appropriate 'iie' reply. You will then hear the correct response. Repeat the response.

Dai ni ka no jumbi o sʸte imasʸ ka?	___	(At	___
Itte imasʸ ka?	___	this	___
Kʸte imasʸ ka?	___	point	___
Šiŋa sañ o sʸtte imasʸ ka?	___	you	___
Koḍe wa Šiŋa sañ no e desʸ ka?	___	will	___
Koḍe wa e desʸ ka?	___	hear	___
		the	
		answer.	
		Repeat it.)	

There is no drill of exactly equivalent design for the lessons with glosses.

2.14. Additive Frame Drill (G): You will hear an utterance. Use this utterance correctly with "mite imasʸ".

ookina e	___	(At	___
čiisana hoñya	___	this	___
taiheñ čiisana ki	___	point	___
taiheñ ookina biñ	___	you	___
kono ookina haná	___	will	___
kono čiisana kañ	___	hear	___
kono taiheñ ookina kʸši	___	the	___
kono taiheñ čiisana ḍañ no hañna	___	answer.	___
kono taiheñ čiisana suŋi no ki no ie	___		___
kono taiheñ ookina giñkoo	___	Repeat	___
kono ookina kooeñ	___	it.)	___

There is no drill of exactly equivalent design for the lessons with glosses.

2.15. Subtractive Frame Drill (G): You will hear an utterance containing "juu". Give the utterance without the "juu".

dai juu yoñ ka	___	(At	___
dai juu ni ka	___	this	___
dai juu go ka	___	point	___
dai juu sañ ka	___	you will	___
dai juu ikka	___	hear the	___
		answer.	
		Repeat it.)	

There is no drill of exactly equivalent design for the lessons with glosses.

2.16. Combinative Drill (G̃): You will hear a partial sentence. You are to make the sentence complete by combining it with 'hai' or 'iie', whichever one is the correct choice. You will then hear the correct combination. Repeat it.

mite imasu	____	(At	____
mite imasen	____	this	____
soo desu	____	point	____
soo ja arimasen	____	you	____
kite imasen	____	will	____
akete imasen	____	hear	____
šite imasu	____	the	____
itte imasen	____	answer.	____
kitte imasu	____		____
itte imasu	____	Repeat	____
akete imasu	____	it.)	____
kitte imasen	____		____
šitte imasu	____		____
šitte imasen	____		____
kite imasu	____		____
šite imasen	____		____

There is no drill of exactly equivalent design for the lessons with glosses.

2.17. Transformation Drill (G): You will hear a Japanese statement. Then you will hear the English equivalent of the question form of that statement. There will be a pause while you produce the question in Japanese. You will then hear the instructor give the Japanese. Repeat it. Here is an example:

E desu.	E desu ka?	E desu ka?	E desu ka?
Is it a picture?	(Student)	(Instructor)	(Student)
Dan no hana desu.		(At	
Is it an orchid?	____	this point	____
Pan desu.		you	
Is it bread?	____	will hear	____
Dan desu.		the	
Is it a platform?	____	answer.	____
Hon desu.		Repeat	
Is it a book?	____	it.)	____
Keeki desu.			
Is it a cake?	____		____
Eki desu.			
Is it a railroad station?	____		____
Kuši desu.			
Is it cloth?	____		____

Šiito desɤ.
Is it a sheet? ____ ____

Ito desɤ.
Is it thread? ____ ____

Kco desɤ.
Is it incense? ____ ____

Hana desɤ.
Is it a flower? ____ ____

2.18. Tranformation Drill (Ḡ): You will hear a statement. Turn it into a question by adding 'ka'.

Koḍe wa e desɤ.
Šiŋa sañ wa kono e o mite imasɤ. ____

Koḍe wa hon desɤ.
Šiŋa sañ wa kono hoñ o mite imasɤ. ____

Koḍe wa kɤši desɤ.
Šiŋa sañ wa kono kɤši o mite imasɤ. ____

Koḍe wa keeki desɤ.
Šiŋa sañ wa kono keeki o mite imasɤ. ____

Koḍe wa ḍan no hana desɤ.
Šiŋa sañ wa kono ḍañ no hana o mite imasɤ. ____

(At this point you will hear the answer. Repeat it.) ____ ____ ____ ____

2.19. Question-Answer Drill (G): You will hear a question and answer, first in English and then in Japanese. Repeat the Japanese.

What lesson is this?
This is the 2nd lesson.
Koḍe wa dai nañ ka desɤ ka?
Koḍe wa dai ni ka desɤ.

What lesson is this?
This is the 20th lesson.
Koḍe wa dai nañ ka desɤ ka?
Koḍe wa dai ni jikka desɤ.

What lesson is this?
This is the 1st lesson.
Koḍe wa dai nañ ka desɤ ka?
Koḍe wa dai ikka desɤ.

What lesson is this?
This is the 10th lesson.
Koḍe wa dai nañ ka desɤ ka?
Koḍe wa dai jikka desɤ.

What lesson is this?
This is the 3rd lesson.
Koḍe wa dai nañ ka desɤ ka?
Koḍe wa dai sañ ka desɤ.

2.20 Question-Answer Drill (G): You will hear a question and its answer. Just listen. You will hear the question again. Repeat it. Then you will hear the answer. Repeat it.

Šiŋa saⁿ wa itsu Tookyoo e ikimasɣ́ ka?
Aš́ta ikimasɣ́.

Šiŋa saⁿ wa itsu gakkoo e kimasɣ́ ka?
Aš́ta kimasɣ́.

Šiŋa saⁿ wa itsu Hakone e kaeḍimasɣ́ ka?
Aš́ta kaeḍimasɣ́.

Šiŋa saⁿ wa itsu kono kaⁿ o akemasɣ́ ka?
Aš́ta akemasɣ́.

Šiŋa saⁿ wa itsu dai juu hač́ ka no juⁿbi o šimasɣ́ ka?
Aš́ta šimasɣ́.

Appendix E

SCRIPT, FINAL TEST (TEST 3)

I. You will hear one Japanese word. It will be followed by two more words. Check on the answer sheet which of the two words is the same as the first. Here is an example in English:

1. Pete

   a. pit
   b. Pete

You should have checked the "b" space on the answer sheet. Now go on with the questions.

2. tsuŋí

   a. suŋí
   b. tsuŋí

3. kʲči

   a. kʲči
   b. kʲši

4. šʲttsui

   a. šʲtsui
   b. šʲttsui

5. kinoo

   a. kiŋoo
   b. kinoo

6. kʲku

   a. kʲkú
   b. kʲku

7. haɖé

   a. haɖé
   b. hadé

8. sóoto

   a. sótto
   b. sóoto

9. xʲkú

   a. šʲkú
   b. xʲkú

10. su

    a. su
    b. sú

11. séččʲ

    a. séčʲ
    b. séččʲ

12. šókkʲ

    a. šókʲ
    b. šókkʲ

13. koí

    a. koí
    b. kói

14. ximó

    a. šimó
    b. ximó

15. késa

    a. késsa
    b. késa

16. kaŋí

    a. kaŋí
    b. kaní

17. kášši

    a. káššši
    b. káši

18. kʲči

    a. kʲči
    b. kʲši

19. é

    a. e
    b. é

20. sékkí

a. sékí
b. sékkí

21. hai

a. hai
b. hái

22. kášši

a. kášši
b. káši

23. hadé

a. hadé
b. hadé

24. é

a. é
b. e

25. šimó

a. šimó
b. ximó

26. kúkú

a. kúkú
b. kúku

27. kíči

a. kíči
b. kíši

28. tsuŋí

a. suŋí
b. tsuŋí

29. sótto

a. sótto
b. sóoto

30. koí

a. koí
b. kói

31. késa

a. késsa
b. késa

32. sékí

a. sékkí
b. sékí

33. sú

a. sú
b. su

34. kinoo

a. kinoo
b. kiŋoo

35. šókkú

a. šókkú
b. šókú

36. séččí

a. séččí
b. séčí

37. xíkú

a. šíkú
b. xíkú

38. den

a. den
b. ḍen

39. kaní

a. kaŋí
b. kaní

40. kái

a. kai
b. kái

41. šítsui

a. šíttsui
b. šítsui

II. You will hear a Japanese utterance. Then you will hear two replies. Indicate the correct reply by checking "a" or "b" on your answer sheet. The utterance will be repeated. The replies will be heard only once. Here is an example in English:

1. Please close the window. Please close the window.

   a. All right, I'll do it.
   b. All right, I won't.

You should have checked the "a" space on the answer sheet. Now go on with the test.

2. Koḍe wa hana no e desɣ́ ka?

   a. Iie, soo ja aḍimaseñ.
   b. Koḍe wa hana desɣ́.

3. Dai yoñ ka no juñbi o sǰ́te kudasai.

   a. Hai, sǰ́te imasɣ́.
   b. Hai, itašimasɣ́.

4. Koḍe wa dai nañ ka desɣ́ ka?

   a. Koḍe wa dai ḍokka desɣ́.
   b. Koḍe wa hoñya no e desɣ́.

5. Ekǰ́čoo wa doko e itte imasɣ́ ka?

   a. Eiŋa e itte imasɣ́.
   b. Hai, itte imasɣ́.

6. Pañ o kǰ́tte ite kudasai.

   a. Hai, kǰ́tte imasɣ́.
   b. Hai, kiḍimasɣ́.

7. Nañ no e desɣ́ ka?

   a. Iie, soo ja aḍimaseñ.
   b. Hato no e desɣ́.

8. Koñno sañ wa doko ni imasɣ́ ka?

   a. Hoteḍu ni imasɣ́.
   b. Iie, imaseñ.

9. Hoñ o akete imasɣ́ ka?

   a. Iie, akete imaseñ.
   b. Hai, akemasɣ́.

10. Dai hǽčǰ́ ka no juñbi o sǰ́te kudasai.

    a. Iie, sǰ́te imaseñ.
    b. Hai, itašimasɣ́.

11. Koḍe wa watakɣši no taiheñ čiisana peñ desɣ ka?

    a. Iie, soo ja aḍimaseñ.
    b. Kono taiheñ čiisana peñ desɣ.

12. Šiŋa sañ wa itsu gakkoo e kaeḍimasɣ ka?

    a. Iie, kaette imaseñ.
    b. Ašɣta kaeḍimasɣ.

13. Kɣte kudasai.

    a. Hai, ikimasɣ.
    b. Hai, kɣte imasɣ.

14. Yamada sañ, kono hoñ o mite itte kudasai.

    a. Hai, mite ikimasɣ.
    b. Hai, itte mimasɣ.

15. Koḍe wa nañ no e desɣ ka?

    a. Koḍe wa kañ no e desɣ.
    b. Koḍe wa e desɣ.

16. Koñno sañ no ookina biñ o mite kudasai.

    a. Hai, mimasɣ.
    b. Hai, mite mimasɣ.

17. Akete ite kudasai.

    a. Hai, akete ikimasɣ.
    b. Hai, akete imasɣ.

18. Šɣtte imasɣ ka?

    a. Iie, šɣte imaseñ.
    b. Iie, šɣtte imaseñ.

19. Kɣte kudasai.

    a. Hai, kiḍimasɣ.
    b. Hai, ikimasɣ.

20. Akete itte kudasai.

    a. Hai, akete ikimasɣ.
    b. Hai, akete imasɣ.

21. Šite kudasai.

    a. Hai, itašimasɣ.
    b. Hai, ikimasɣ.

22. Kɣte kudasai.

    a. Hai, kiḍimasɣ.
    b. Hai, ikimasɣ.

23. Ite kudasai.

a. Hai, ikimasu.
b. Hai, imasu.

24. Šite imasu ka?

a. Hai, šite imasu.
b. Hai, šitte imasu.

25. Ite kudasai.

a. Hai, ikimasu.
b. Hai, imasu.

26. Kite kudasai.

a. Hai, itašimasu.
b. Hai, ikimasu.

III. a. Notice the use of "kiji" in the following sentence: "Kiji o mite kudasai. Kiji o mite kudasai." You will hear an item. Each item will be said twice. If the item can occur in the same place in the sentence "kiji" does, check "yes" on your answer sheet; if it cannot, check "no." Here is an example in English:

1. Notice the use of "the man" in "The man saw the dog. The man saw the dog." Can "am watching, am watching" occur in the same place as "the man?"

You should have checked the "no" space on the answer sheet. "Am watching saw the dog." is not a sentence in English. Now you will hear the Japanese sentence again. "Kiji o mite kudasai. Kiji o mite kudasai." Can the following items be substituted for "kiji?"

2. iči peeji no e
3. hato
4. itsu
5. ki
6. hana
7. gakkoo e
8. nañ no e
9. iie
10. ie
11. uči ni
12. Yamada sañ wa
13. kono
14. soto
15. watakuši no e
16. kono taiheñ ookina kuši

b. Now notice the use of "kiji" in the following sentence: "Kiji desu. Kiji desu." You will hear an item. Each item will be said twice. If the item can occur in the same place in the sentence "kiji" does, check "yes" on the answer sheet; if it cannot, check "no." Here you will hear the sentence again: "Kiji desu. Kiji desu."

1. nan no e
2. uči ni
3. kode wa nan
4. itsu
5. ki no e
6. hon o
7. watakuši no kan
8. doko
9. honya e
10. ie

c. Notice the use of "Tookyoo" in the sentence "Has he gone to Tokyo? Tookyoo e itte imasu ka? Tookyoo e itte imasu ka?" You will hear an item. Each item will be said twice. If the item can occur in the same place in the sentence "Tookyoo" does, check "yes" on the answer sheet; if it cannot, check "no." Here you will hear the sentence again: "Tookyoo e itte imasu ka? Tookyoo e itte imasu ka?"

1. soto
2. doko
3. éki
4. iie
5. honya
6. gakkoo ni
7. kode wa nan
8. nan no kono e
9. taihen ookina ginkoo
10. hotedu no e o

IV. You will hear an English utterance. Then you will hear three Japanese utterances. Indicate the Japanese which matches the English by checking "a", "b", or "c" on the answer sheet. The English will be said twice, the Japanese only once. Here is an example:

1. please
   a. hai
   b. kudasai
   c. adimasen

You should have checked the "b" space on the answer sheet. Now go on with the test.

2. a nose

a. hána
b. haná
c. suná

3. outside

a. doko
b. sooto
c. soto

4. cedar

a. tsumi
b. suŋí
c. kuŋí

5. chinaware

a. ito
b. hato
c. seto

6. He's going to come

a. ikimasɅ
b. kiḍimasɅ
c. kimasɅ

7. seven

a. šɅčí
b. hɅčí
c. čɅší

8. a bank

a. eiŋa
b. giñkoo
c. koñŋo

9. a maid

a. meedo
b. koodo
c. sudo

10. what

a. sañ
b. nañ
c. tañ

11. a house

a. uči
b. itsu
c. ie

12. the nineteenth lesson

a. dai juu kyuu ka
b. dai juu ka
c. dai kyuu ka

13. Yes, he has come.

a. Hai, kɅte imasɅ.
b. Hai, ikimasɅ.
c Hai, kite imasen̄.

14. It's this picture.

a. Koḍe wa e desɅ.
b. Kono e desɅ.
c. Kono wa e desɅ.

15. Please look at the tray.

a. Biñ o mite kudasai.
b. Bañ o mite kudasai.
c. Boñ o mite kudasai.

16. All right, I'll keep cutting it.

a. Hai, kiḍimasɅ.
b. Hai, kɅtte imasɅ.
c. Hai, kɅtte mimasɅ.

17. the third lesson

a. dai sañ ka
b. dai yoñ ka
c. dai nañ ka

18. Mr. Yamada knows Mr. Shiga.

a. Šiŋa sañ wa Yamada sañ o šɅtte imasɅ.
b. Yamada sañ wa Šiŋa sañ wa šɅtte imasɅ.
c. Yamada sañ wa Šiŋa sañ o šɅtte imasɅ.

19. I am going to look at this book.

a. WatakɅši wa kono no hoñ o mimasɅ.
b. WatakɅši wa kono hoñ o mimasɅ.
c. WatakɅši wa kono hoñ o mite mimasɅ.

20. Mr. Konno has gone to the hotel.

a. Koñno sañ wa hoteḍu e itte imasɅ.
b. Koñno sañ wa hoteḍu ni imasɅ.
c. Koñno sañ wa hoteḍu no e ikimasɅ.

21. This is a picture of a very large hotel.

a. Koḍe wa taiheñ ookina hoteḍu no e desɅ.
b. Koḍe wa hoteḍu no taiheñ ookina e desɅ.
c. Koḍe wa ookina hoteḍu no e desɅ.

V. You will hear a Japanese utterance. Then you will hear three English utterances. Indicate the English which matches the Japanese by checking "a", "b", or "c" on the answer sheet. The Japanese will be said twice, the English only once. Here is an example:

1. kíji

   a. cut
   b. cloth
   c. please

You should have checked the "b" space on the answer sheet. Now go on with the test.

2. kiñ

   a. a bottle
   b. a can
   c. gold

3. ká

   a. lesson
   b. shellfish
   c. very

4. fɯkušuu

   a. preparation
   b. a review
   c. a number

5. aḍé

   a. that(over there)
   b. this
   c. a branch

6. kíeñ

   a. a garden
   b. a tree
   c. an opportunity

7. gakkoo

   a. a building
   b. a bank
   c. a school

8. kómma

   a. a top
   b. a comma
   c. from now on

9. icí

   a. one
   b. slowly
   c. a comb

10. poñ

    a. pop
    b. a tray
    c. bread

11. keši

    a. an orchid
    b. a chrysanthemum
    c. a poppy

12. dai jikka

    a. the first lesson
    b. the tenth lesson
    c. the fourteenth lesson

13. Hai, šimasɯ.

    a. Yes, he's going to do it.
    b. All right, I'll do it.
    c. Yes, he's doing it.

14. Seki desu ka?

a. Is it a seat?
b. Is it a cake?
c. Is it a railroad station?

15. dai juu ikka no junbi

a. the twenty-first lesson
b. the eleventh lesson
c. the first lesson

16. Iie, Hakone e kite imasen.

a. No, he hasn't returned to Hakone.
b. No, he hasn't gone to Hakone.
c. No, he hasn't come to Hakone.

17. Kono hotedu ni ite kudasai.

a. Please stay at Mr. Konno's hotel.
b. Please go to this hotel.
c. Please stay at this hotel.

18. Aoki san wa kono bin o akemasu.

a. Mr. Aoki is going to open this bottle.
b. Mr. Aoki is opening this bottle.
c. Mr. Aoki, open this bottle.

19. Kono e wa suŋi no ki no dan no e desu ka?

a. Is this picture a picture of a cedar tree?
b. Is this picture a picture of a gate of cedar wood?
c. Is this picture a picture of a platform of cedar wood?

20. Kode wa taihen ookina ki no čiisana e desu.

a. This is a small picture of a very large tree.
b. It is this small picture of a very large tree.
c. This is a very small picture of a large tree.

21. Yamada san wa itsu Aita san no honya e ikimasu ka?

a. When is Mr. Yamada going to Mr. Aita's bookstore?
b. Mr. Yamada, when is Mr. Aita going to the bookstore?
c. When is Mr. Yamada going to Mr. Aita's bank?

VI. The answers to this question will be recorded. You will hear an English item two times. In the following pause you are to give the Japanese equivalent of the English. Say the Japanese twice. Here is an example:

1. please, please

kudasai, kudasai

Remember, you must say the Japanese twice.
Now go on with the test.

2.	a flower	haná
3.	a monarch	kínŋu
4.	a bathtub	yúoke
5.	a movie	eiŋa
6.	the national treasury	kókko
7.	a plate	bañ
8.	a chrysanthemum	kɤ́kú
9.	vinegar	sú
10.	a riot	íkki
11.	a gate	kádo
12.	a bookstore	hóñya
13.	art	áato
14.	a comb	kɤ́ši
15.	bread	páñ
16.	a school	gákkoo
17.	a platform	dáñ
18.	thread	íto
19.	incense	kóo
20.	a tree	kí
21.	the stationmaster	ekɤ́čoo
22.	the sixth lesson	dai ḍokka
23.	page one	iči peeji
24.	an orchid	ḍañ no hana
25.	the twentieth lesson	dai ni jikka
26.	Please stay.	Ite kudasai.
27.	the eleventh lesson	dai juu ikka
28.	He's coming tomorrow.	Ašɤ́ta kimasɤ́.
29.	a small garden	čiisana kaeñ
30.	a house of cedar wood	suŋi no ki no ie
31.	All right, I'll do it.	Hai, itašimasɤ́.
32.	It's a large sheet.	Ookina šiito desɤ́.
33.	this book of mine	kono watakɤ́ši no hoñ
34.	No, he's not looking at the book.	Iie, hoñ o mite imaseñ.
35.	This is a picture of a movie set.	Koḍe wa setto no e desɤ́.
36.	What lesson is this?	Koḍe wa dai nañ ka desɤ́ ka?
37.	Is Mr. Shiga at home?	Šiŋa sañ wa uči ni imasɤ́ ka?
38.	Please keep looking at Mr. Konno.	Koñno sañ o mite ite kudasai.
39.	Mr. Konno is opening a can.	Koñno sañ wa kañ o akete imasɤ́.

40.	Mr. Yamada, what is this?	Yamada sañ, koḍe wa nañ desɣ ka?
41.	Mr. Shiga is going to cut this cake.	Šiŋa sañ wa kono keeki o kiḍimasɣ.
42.	This is a very small cake.	Koḍe wa taiheñ čiisana keeki desɣ.
43.	Mr. Yamada knows me.	Yamada sañ wa watakɣši o šɣtte imasɣ.
44.	When is Mr. Konno going to the hotel?	Koñno sañ wa itsu hoteḍu e ikimasɣ ka?
45.	When is Mr. Shiga returning to Tokyo?	Šiŋa sañ wa itsu Tookyo e kaḍimasɣ ka?
46.	I am going to do the preparation for the 1st lesson tomorrow.	Watakɣši wa ašɣta dai ikka no juñbi o šimasɣ.

VII. You will hear a Japanese utterance. There will be a long pause in which you are to say the utterance twice. Here is an example in English:

"Who'd you see yesterday?"

"Who'd you see yesterday?
Who'd you see yesterday?"

At this point depress the "play" key of your tape recorder. If your tape reels do not move, stand up so that the assistant can start your tape recorder before beginning this question.

Now go on with the test. Remember, <u>say each utterance twice</u>!

kudasai.
Mite kudasai.
E o mite kudasai.
Čiisana e o mite kudasai.
Peeji no čiisana e o mite kudasai.
Ičči peeji no čiisana e o mite kudasai.
Šiŋa sañ, iči peeji no čiisana e o mite kudasai.

Šiŋa sañ, peeji no čiisana e o mite kudasai.
Šiŋa sañ, ciisana e o mite kudasai.
Šiŋa sañ, e o mite kudasai.
Šiŋa sañ, mite kudasai.

Question VII, Part II. Repeat each of the following utterances twice, just as you have been doing in the preceding part of this question. Repeat each utterance twice.

1. Itte kudasai.

2. E o mite imasɣ.

3. Itte mite kudasai.

4. Kiji o kɣtte itte kudasai.

5. Kokko no e o kɣtte kudasai.

6. Ḍañ no han no e o mite kudasai.

7. Šiŋa sañ no hoñ o akete mite kudasai.

8. Šiŋa sañ no e wa ḍañ no hana no e desɣ.

9. Koñno sañ, Šiŋa sañ no kiji o kɣtte ite kudasai.

10. Šiŋa sañ wa Koñno sañ no taiheñ čiisana hoñ o kɣtte mite imasɣ.

VIII.* This test consists of 53 short Japanese sentences. Some of the sentences appear more than once. Although you are familiar with most of the words, a few of the words will be new to you.

You will hear a sentence said twice. There will be a short pause for you to say that same sentence twice. Speak when you hear a ring, like this: (RING). For example,

Yamada sañ desɣ ka?

Yamada sañ desɣ ka? (RING)

When you hear the ring, you say,

Yamada sañ desɣ ka?

Yamada sañ desɣ ka?

You are now going to practice. Try to make your pronunciation as much like that of the Japanese voice as you can. Let's begin.

Hai, akemasɣ.

Hai, akemasɣ. (RING)

PAUSE

Hato no e desɣ.

Hato no e desɣ. (RING)

PAUSE

*For items judged phonetically, critical segments are underlined.

We will now go ahead with the test. Remember to say each sentence twice, with as good pronunciation as you can. There will be a pause now. Please give your name.

PAUSE

All right, let's begin the test.

K/ku desu.

Iie, mite mimasen.

Kode wa doku desu.

Konban wa. [Buffer item]

Ade wa x/tai desu.

Mite ite kudasai.

Kono kado desu ka?

Iie, š/tte imasen.

Čiisana bin desu. [Buffer item]

Šooko desu.

Kin no e desu ka?

Haná no e desu.

Iie, soo ja adimasen. [Buffer item]

Kode wa sú desu.

Čotto k/te imasu ka?

Kode wa saí desu.

Tei o mite kudasai.

Anata wa? [Buffer item]

Kó desu ka?

Eki e kimasu.

Šookoo desu ka?

Ič/ peeji no e desu.

Ekíčoo wa soto e itte imasu.

Eiŋa wa doko desu ka?

Hai, itašimasu.

Kooeñ e kaette imasu.

Ano kuda desu.

Me wa čiisai desu.

Hotedu e itte imasu.

Me o xidakimasu.

Kañ o akete kudasai.

Ima dekakemasu.

Kúku desu.

Iie, mite nimaseñ.

Kode wa doku desu.

Koñbañ wa. [Buffer item]

Ade wa šítai desu.

Mite itte kudasai.

Kono kaado desu ka?

Iie, šíte imaseñ.

Čiisana biñ desu. [Buffer item]

Šoko desu.

Kí no e desu ka?

Hána no e desu.

Iie, soo ja adimaseñ. [Buffer item]

Kode wa su desu.

Čooto kíte imasu ka?

Kode wa sái desu.

Te o mite kudasai.

Anata wa? [Buffer item]

Kóu desɅ ka?

Eki e ikimasɅ.

Šookoo desɅ ka?

Now please give your name.

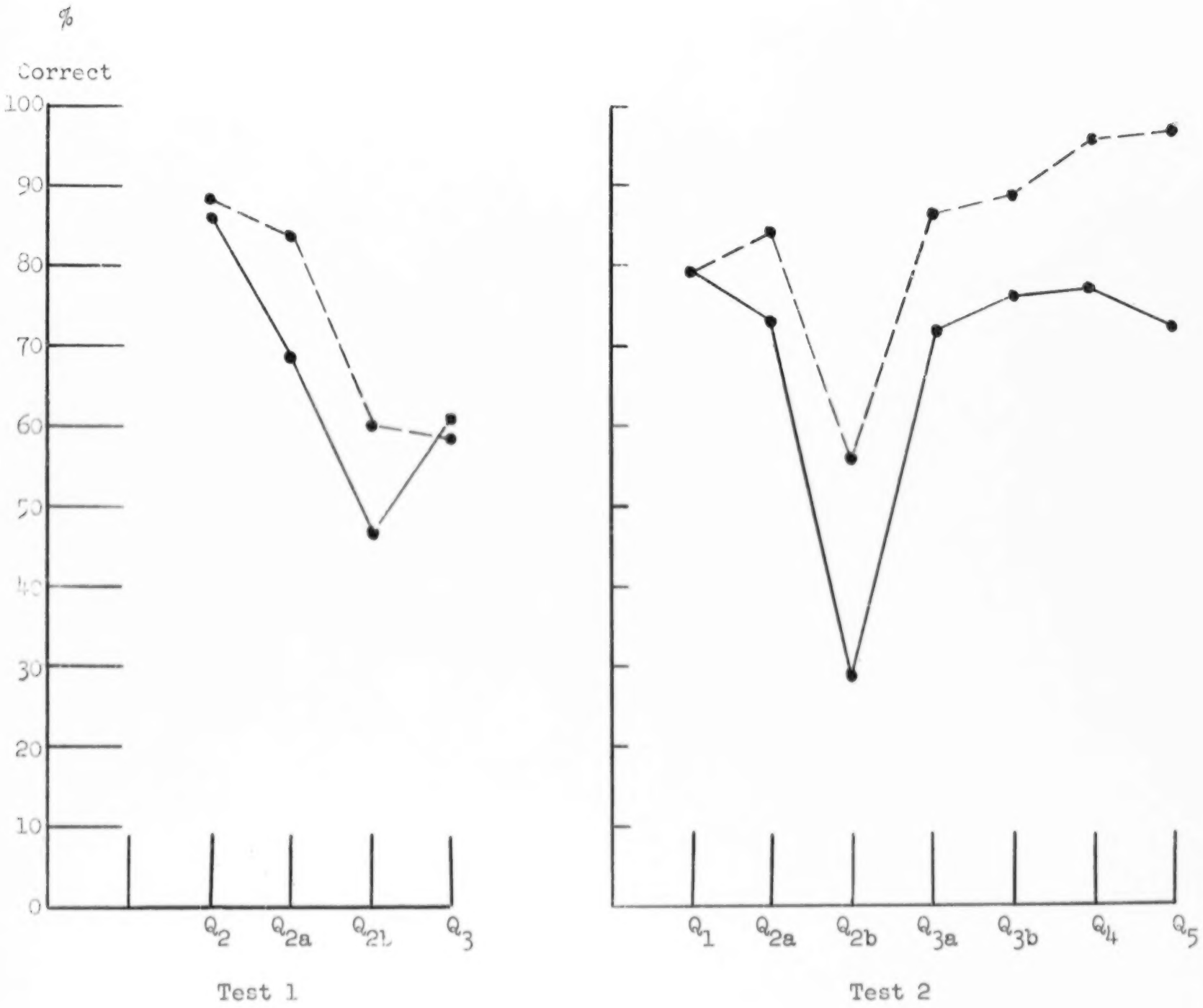
PAUSE

End, Test III, Question VIII.

Figure 1

Comparison of Spring and Fall Test Results

for Group I Reading



Test 1

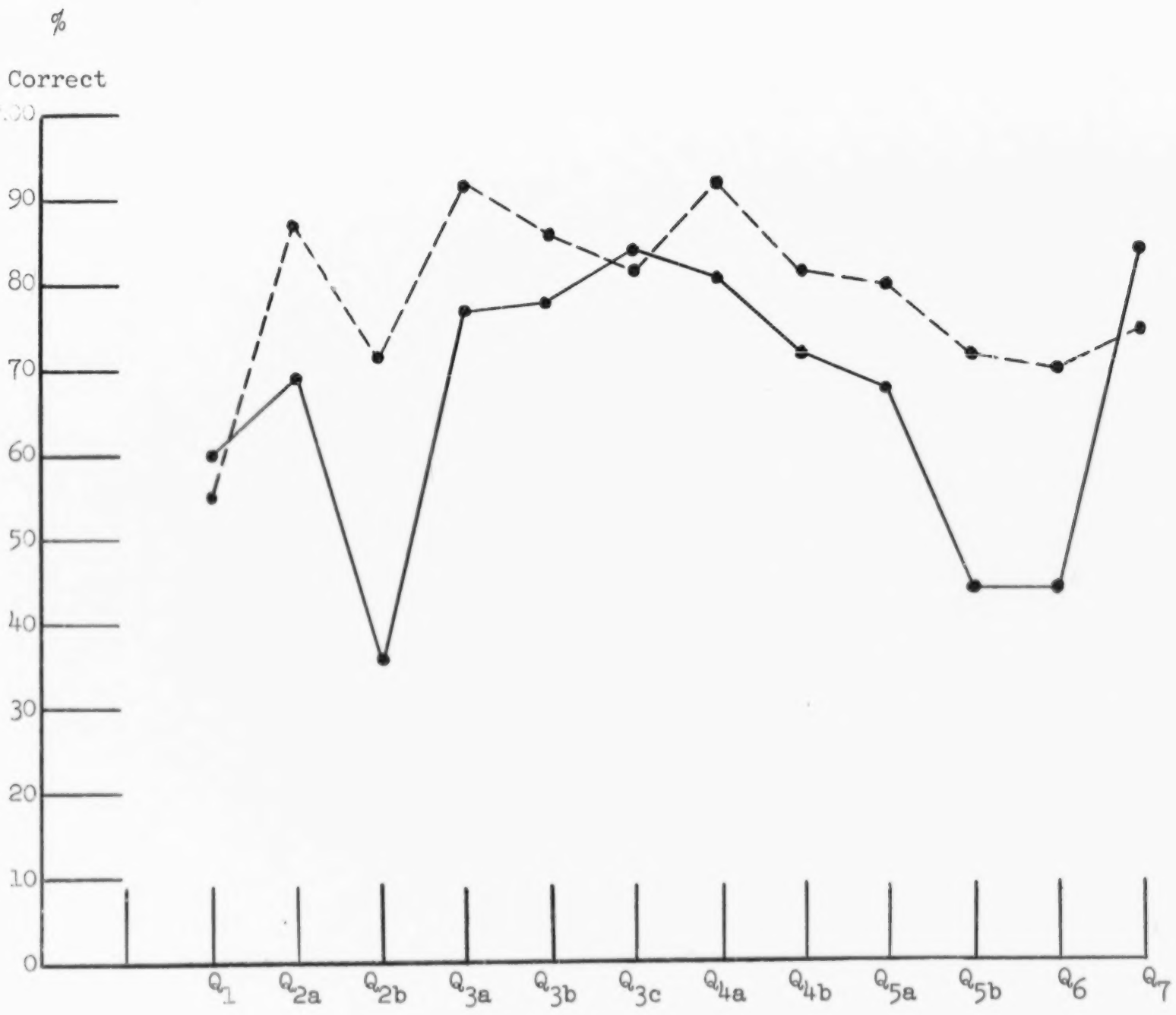
Test 2

Fall: ——— Spring: ------

Figure 2

Comparison of Spring and Fall Test Results

for Group I Reading



Fall: ——— Spring: ------

Figure 3

Comparison of Spring and Fall Test Results

for Group II Non-reading

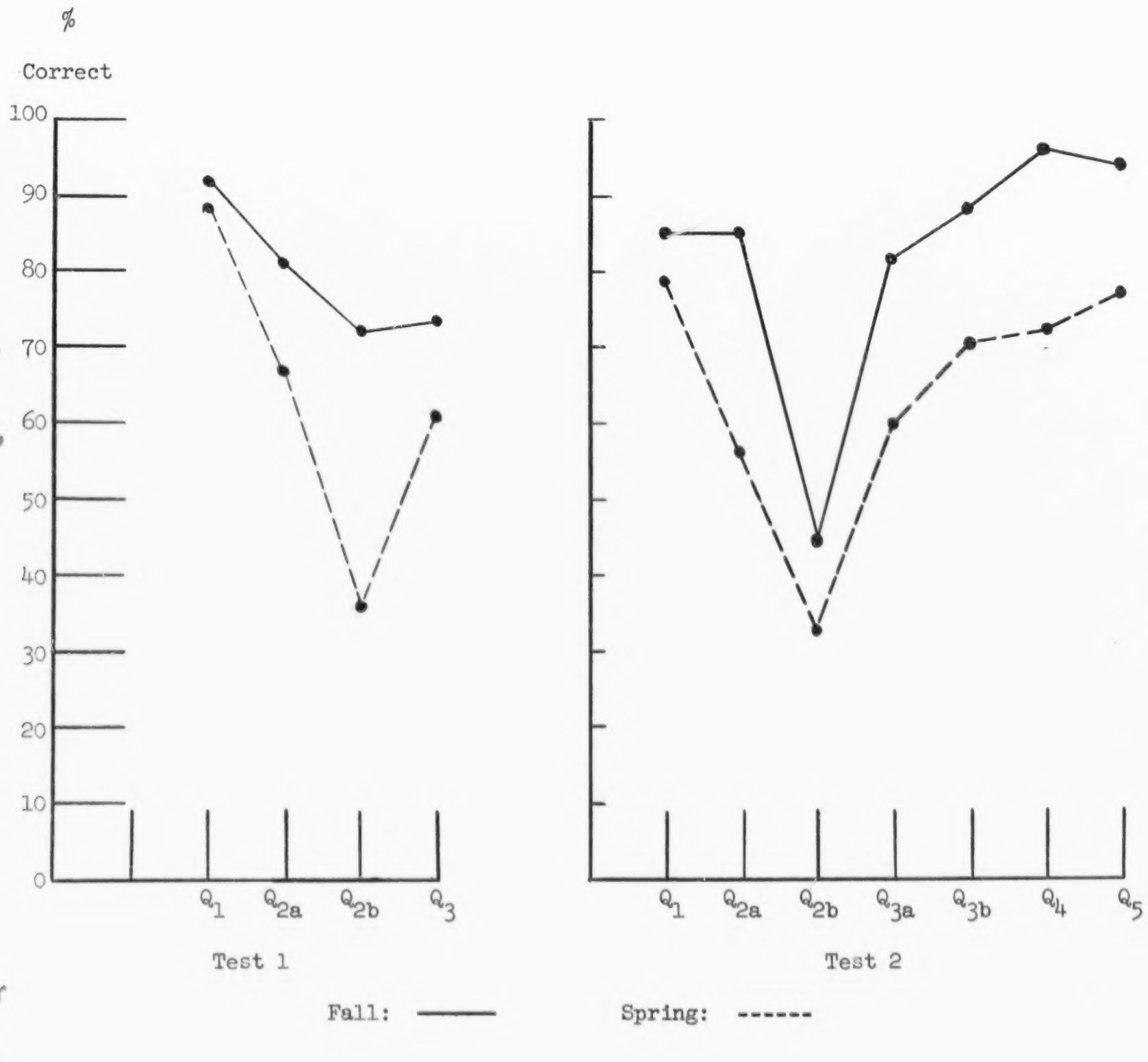


Figure 4

Comparison of Spring and Fall Test Results

for Group II Non-reading